



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

NAVMC 3500.129 .  
PSD

**JUL 06 2021**

NAVMC 3500.129

From: Commandant of the Marine Corps  
To: Distribution List

Subj: CH-53K TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14E

Encl: (1) CH-53K T&R Manual

1. Purpose. Per the reference, the CH-53K Training and Readiness (T&R) Manual contained in enclosure (1) establishes training standards, regulations, and policies regarding the training of CH-53K aircrews.

2. Scope

a. This Manual represents the collaborative efforts of subject matter experts from Deputy Commandant for Aviation; Marine Aviation Weapons Tactics Squadron One; Marine Operational Test and Evaluation Squadron One; Naval Air Systems Command; the Total Force; and Training and Education Command, Policy and Standards Division, Aviation Standards Branch.

b. This first-ever T&R manual for CH-53K aircrews provides training progression as follows:

(1) Chapter one outlines unit T&R requirements.

(2) Chapter two, pilot, includes 1000 through 6000 phases of training (core introduction, core, mission, core plus, mission plus, instructor, and designations).

(3) Chapter three, crew chief, and Chapter four, aerial gunner/ observer, mirrors the construct of Chapter two.

3. Information. Commanding General (CG), Training and Education Command (TECOM) will update this 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 (PSD), 1019 Elliot Road, Quantico, Virginia 22134.

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

4. Command. This Manual is applicable to the Marine Corps Total Force.

5. Certification. Reviewed and approved this date.



LEWIS A. CRAPAROTTA  
Commanding General  
Training and Education Command  
By direction

DISTRIBUTION: PCN 10031985000

CHAPTER 1  
CH-53K TRAINING AND READINESS UNIT REQUIREMENT

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## CHAPTER 1

### CH-53K TRAINING AND READINESS UNIT REQUIREMENTS

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 assault support transport of heavy equipment, combat troops, and supplies, day or night under all weather conditions during expeditionary, joint, or combined operations.

1.1.2 **FLEET REPLACEMENT SQUADRON.** Conduct Core Introduction assault support heavy lift helicopter aircrew training in the CH-53K aircraft and 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 CH-53K squadrons. As of this publication date, an HMH/Fleet Replacement squadron is authorized.

#### 1.2.1 Tactical Squadron

HMH CH-53K				
Table of Organization				
Unit	Squadron	Squadron(-)	Detachment	Reserve Squadron
Aircraft	16	12	4	8
Pilots	38	30	8	19
Crew Chiefs	26	20	6	13
AO/AG**	26	20	6	13

#### 1.2.2 Fleet Replacement Squadron

Fleet Replacement Squadron				
Table of Organization				
Aircraft	Instructor Pilots	Crew Chiefs	Crew Chief Instructors	AO/AG*
21	24	24	11	24

\*Aerial Observer / Aerial Gunner

#### 1.2.3 HMH Tactical and Reserve Squadron Critical MOS\*s

CH-53K TACTICAL AND RESERVE SQUADRON CRITICAL MOSs			
MOS Description	PRIMARY MOS	Billet and/or MOS Description	SECONDARY MOS
Pilot		Maintenance Control (Safe-for-flight)	6012
Crew Chief		Collateral Duty Inspector (CDI)	6016
Aircraft Maintenance Chief	6019	Collateral Duty QAR (CDQAR)	6017
Avionics Tech		Quality Assurance Representative (QAR)	6018
Airframe Mechanic		WTI Pilot	7577
Ordnance Technician	6531	WTI Crew Chief	6177
Helicopter Mechanic		Night Systems Instructor	7547
		Night Systems Crew Chief	6171

\*Critical MOS - Those specialties that directly affect the unit's ability to undertake its mission. Definition per MCO 3000.13.  
Note: Flight Leadership MOS captured in Combat Leadership DRRS-MC reporting applicable to training level.

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, theater specific, or have a lower probability of execution. Core Plus METs may be included in readiness reporting when contained within an Assigned Mission METL. An Assigned Mission METL consists of only selected METs (drawn from Core and Core Plus METs) necessary to conduct the assigned mission. MCO 3000.13 provides additional information on readiness reporting.

HMH CH-53K		
MISSION ESSENTIAL TASK LIST (METL)		
CORE		
MET	SKILL ABBREVIATION	DESCRIPTION
MCT 1.3.4.1	CAT	Conduct Combat Assault Transport
MCT 4.3.4.1	AD	Conduct Heavy Rotary Wing Air Delivery
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel
MCT 6.2.2	AE	Conduct Air Evacuation
CORE PLUS		
MET	SKILL ABBREVIATION	DESCRIPTION
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites

1.4 MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION

HMH CH-53K							
MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION							
CORE							
MET	SKILL ABBREVIATION	SIX FUNCTIONS OF MARINE AVIATION					
		OAS	ASPT	AAW	EW	CoA&M	AerRec
MCT 1.3.4.1	CAT		X				
MCT 4.3.4.1	AD		X				
MCT 6.2.1.1	TRAP		X				
MCT 6.2.2	AE		X				
CORE PLUS							
MCT 1.3.4.1.1	RIE		X				
MCT 1.3.4.2.1	ADGR		X				
MCT 1.3.3.3.1	SEA		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. Shading indicates Core Plus.

HMH CH-53K																													
MCT TO CORE/MISSION/CORE PLUS SKILL MATRIX																													
METs	CORE SKILLS 2000 Phase												MISSION SKILLS 3000 PAHSE				CORE PLUS 4000 PHASE												
																	CORE PLUS SKILLS										MISSION PLUS SKILLS		
	FAM	INT	FORM	CAL	TERF	EXT	HAAR	AG	GTR	TAC	NSHLL	NSLLL	CAT	AD	TRAP	AE	HIE	EXT	FCLP	DM	BI	CBRN	U CQ	CQ	TG	TAC	RIE	ADGR	SEA
CAT	X	X	X	X	X		X	X	X	X	X	X	X							X	X	X			X	X			
AD	X	X	X	X	X	X		X	X	X	X	X		X				X		X	X	X			X	X			
TRAP	X	X	X	X	X	X	X	X	X	X	X	X			X					X	X	X			X	X			
AE	X	X	X	X	X			X	X	X	X	X				X				X	X	X			X	X			
CORE PLUS																													
RIE	X	X	X	X	X			X	X	X	X	X					X				X				X	X	X		
ADGR	X	X	X	X	X			X	X	X	X	X													X	X		X	
SEA	X	X	X	X	X			X	X	X	X	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 HMH squadron must be capable of sustaining during contingency/combat operations by MET to be considered MET-ready. Output standards will be demonstrated through the incorporation of unit training events. A core capable HMH squadron 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) 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.

HMH CH-53K									
MET OUTPUT STANDARDS									
CORE									
MET	SKILL	MAXIMUM SORTIES PER MET				MAXIMUM DAILY SORTIES			
		NUMBER OF AIRCRAFT				NUMBER OF AIRCRAFT			
		Squadron 16 A/C	Squadron (-) 12 A/C	Res Sqdn 8 A/C	Detachment 4 A/C	Squadron 16 A/C	Squadron (-) 12 A/C	Res Sqdn 8 A/C	Detachment 4 A/C
MCT 1.3.4.1	CAT	21	16	12	5	21	16	12	5
MCT 4.3.4.1	AD	21	16	12	5				
MCT 6.2.1.1	TRAP	21	16	12	5				
MCT 6.2.2	AE	21	16	12	5				
CORE PLUS									
MET	SKILL	MAXIMUM SORTIES PER MET							
		NUMBER OF AIRCRAFT							
		Squadron 16 A/C	Squadron (-) 12 A/C	Res Sqdn 8 A/C	Detachment 4 A/C				
MCT 1.3.4.1.1	RIE	21	16	12	5				
MCT 1.3.4.2.1	ADGR	4	2	2	2				
MCT 1.3.3.3.1	SEA	21	16	12	5				

\*A 16/12/8/4 plane Mission Capable HMH Squadron / Squadron (-) / Reserve Squadron / Detachment is able to execute 21/16/12/5 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 crew certifications, qualifications, designations, and/or skill training for the Advanced and Baseline Training Standards.

1.7.1 CMMR / Advanced Training Standard: The minimum crew 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 “Crews Trained” columns reflect the CMMR or Advanced Training Standard, the numbers in parentheses indicate the Baseline Training Standard. Normal crew composition is a Pilot, Co-Pilot, Crew Chief, and Aerial Observer/Gunner.

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

HMH CH-53K									
CORE MODEL MINIMUM REQUIREMENTS (CMMR) FOR READINESS REPORTING									
CORE									
MET	SKILL	CREW POSITION				FORMED CREWS REQUIRED PER MET (CREW CMMR)			
		PILOT	CO PILOT	CC	CC/AO*	Squadron 16 A/C	Squadron (-) 12 A/C	Res Sqdn 8 A/C	Detachment 4 A/C
MCT 1.3.4.1	CAT	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	11(7)	9(6)	6(4)	3(2)
MCT 4.3.4.1	AD	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	11(7)	9(6)	6(4)	3(2)
MCT 6.2.1.1	TRAP	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	7(4)	6(4)	4(2)	2(1)
MCT 6.2.2	AE	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	11(7)	9(6)	6(4)	3(2)
CORE PLUS									
MET	SKILL	CREW POSITION				Squadron 16 A/C	Squadron (-) 12 A/C	Res Sqdn 8 A/C	Detachment 4 A/C
		PILOT	CO PILOT	CC	CC/AO*				
MCT 1.3.4.1.1	RIE	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	6(4)	5(3)	3(2)	2(1)
MCT 1.3.4.2.1	ADGR	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	6(4)	5(3)	3(2)	2(1)
MCT 1.3.3.3.1	SEA	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	6(4)	5(3)	3(2)	2(1)
COMBAT LEADERSHIP									
DESIGNATION					Squadron 16 A/C	Squadron (-) 12 A/C	Res Sqdn 8 A/C	Detachment 4 A/C	
HELICOPTER AIRCRAFT COMMANDER					16	12	8	4	
SECTION LEADER					9	6	5	3	
DIVISION LEADER					6	4	3	2	
FLIGHT LEADER					4	3	2	1	
MISSION COMMANDER					3	2	1	1	



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

HMH CH-53K													
CORE MODEL TRAINING STANDARD (CMTS)													
CORE PHASE (2000 Phase)													
CORE SKILLS	PILOT				CREW CHIEF				AERIAL OBSERVER / GUNNER				
	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	
ACAD	22	18	12	6	11	9	6	3	11	9	6	3	
FAM	22	18	12	6	-	-	-	-	-	-	-	-	
INT	-	-	-	-	16	12	8	4	16	12	8	4	
FORM	22	18	12	6	16	12	8	4	16	12	8	4	
CAL	22	18	12	6	16	12	8	4	16	12	8	4	
TERF	22	18	12	6	16	12	8	4	16	12	8	4	
EXT	22	18	12	6	16	12	8	4	16	12	8	4	
HAAR	14	12	8	4	-	-	-	-	-	-	-	-	
AG	22	18	12	6	16	12	8	4	16	12	8	4	
GTR	22	18	12	6	16	12	8	4	16	12	8	4	
TAC	22	18	12	6	16	12	8	4	16	12	8	4	
NS HLL	22	18	12	6	16	12	8	4	16	12	8	4	
NS LLL	22	18	12	6	16	12	8	4	16	12	8	4	
MISSION PHASE (3000 Phase)													
MISSION SKILLS	PILOT				CREW CHIEF				AERIAL OBSERVER / GUNNER				
	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	
CAT	22	18	12	6	16	12	8	4	16	12	8	4	
AD	22	18	12	6	16	12	8	4	16	12	8	4	
TRAP	22	18	12	6	16	12	8	4	16	12	8	4	
AE	22	18	12	6	16	12	8	4	16	12	8	4	
CORE PLUS SKILLS <sup>1</sup> (4000-4499 Phase)													
CORE PLUS SKILL	PILOT				CREW CHIEF				AERIAL OBSERVER / GUNNER				
	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	
HIE	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
EXT	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
DM	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
CBRN	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
FCLP	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
CQ	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
U CQ	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
TG	- -	- -	- -	- -	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
BI	6 12	3 10	2 4	4 4	8 16	4 12	3 6	4 4	8 16	4 12	3 6	4 4	
TAC	2 22	2 18	2 12	2 6	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
MISSION PLUS <sup>1</sup> (4500-4599 Phase)													
MISSION PLUS SKILLS	PILOT				CREW CHIEF				AERIAL OBSERVER / GUNNER				
	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	Squadron 16 A/C	Squad (-) 12 A/C	Res Sqdn 8 A/C	Det 4 A/C	
RIE	2 12	2 11	2 10	2 10	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
ADGR	2 12	2 11	2 10	2 10	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	
SEA	2 12	2 11	2 10	2 10	2 16	2 12	2 8	2 4	0 16	0 12	0 8	0 4	

Note<sup>1</sup>: For Core Plus Mission and Skills, the first number (in blue font and highlighted in gray) represents the number of individuals the 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 Core Plus Skills the commanding officer determines the number of aircrew to train. The CMTS is based upon the community's collective recommendation.

1.9 INSTRUCTOR DESIGNATIONS (5000 Phase).

1.9.1 Tactical and Reserve Squadron

HMH CH-53K								
INSTRUCTOR DESIGNATIONS								
DESIGNATION	PILOTS				CREW CHIEFS			
	NUMBER OF AIRCRAFT				NUMBER OF AIRCRAFT			
	Squadron 16 A/C	Squadron (-) 12A/C	Res Sqdn 8 A/C	Detachment 4 A/C	Squadron 16 A/C	Squadron (-) 12A/C	Res Sqdn 8 A/C	Detachment 4 A/C
ARI	6	3	2	1	N/A	N/A	N/A	N/A
NII	4	2	2	1	N/A	N/A	N/A	N/A
BIP	16	12	8	4	N/A	N/A	N/A	N/A
TSI	16	12	8	4	N/A	N/A	N/A	N/A
FLSE <sup>1</sup>	3	2	2	1	N/A	N/A	N/A	N/A
TERFI	8	4	2	2	8	3	2	2
DMI	4	2	2	1	4	2	2	1
NSI	6	4	2	1	6	4	3	2
WTI	3	3	2	1	3	3	2	1
NI	1	1	1	1	1	1	1	1
ANI	3	2	2	1	3	2	2	1
FCPI	1	1	1	1	N/A	N/A	N/A	N/A
AFCPI	2	2	2	1	N/A	N/A	N/A	N/A
Note <sup>1</sup> - FLSEs are Designated by the Group CO								
DESIGNATION	CREW CHIEFS AND/OR AERIAL GUNNER/AERIAL OBSERVER <sup>2</sup>							
	NUMBER OF AIRCRAFT							
	Squadron 16 A/C	Squadron (-) 12 A/C		Reserve Squadron 8 A/C		Detachment 4 A/C		
AGI	6	3		3		2		
APFI	3	2		1		1		
Note <sup>2</sup> - AO/AG designated as AGIs and TGIs may be used to fulfill this requirement								

1.9.2 Fleet Replacement Squadron

FLEET REPLACEMENT SQUADRON		
INSTRUCTOR DESIGNATIONS		
DESIGNATION	PILOTS	CREW CHIEFS
FRSI	24	11
BIP	24	N/A
ARI	0	N/A
NII	3	N/A
FLSE <sup>1</sup>	2	N/A
TERFI	24	12
DMI	0	0
WTI	1	2
NSF <sup>2</sup>	2	6
NSFI	8	4
NI	1	1
ANI	2	1
Note <sup>1</sup> - FLSEs are Designated by the Group CO		
Note <sup>2</sup> - NSIs may be used to fulfill NSFI requirement		
DESIGNATION	CREW CHIEFS AND/OR AERIAL GUNNER/AERIAL OBSERVER <sup>3</sup>	
AGI	8	
Note <sup>3</sup> - AO/AG designated as AGIs and TGIs may be used to fulfill this requirement		

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

1.10.1 Tactical and Reserve Squadron

HMH CH-53K				
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)				
	PILOTS			
	Squadron 16 A/C	Squadron (-) 12 A/C	Reserve Squadron 8 A/C	Detachment 4 A/C
FCP	8	5	4	3
FCF CREW CHIEF	8	5	4	3

1.10.2 Fleet Replacement Squadron

FLEET REPLACEMENT SQUADRON	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)	
21 Aircraft	
DESIGNATIONS	PILOTS
HAC	24
SECTION LEADER	24
DIVISION LEADER	4
FLIGHT LEADER	2
MISSION COMMANDER	0
FCP	12
FCF CREW CHIEF	12
CRMF	24

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APPENDIX A

HMH (CH-53K) MET WORKSHEET

**CORE**

MCT 1.3.4.1	Conduct Combat Assault Transport
MCT 4.3.4.1	Conduct Heavy Rotary Wing Air Delivery
MCT 6.2.1.1	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)
MCT 6.2.2	Conduct Air Evacuation

**CORE Plus**

MCT 1.3.4.1.1	Conduct Airborne Rapid Insertion/Extraction
MCT 1.3.4.2.1	Provide Aviation-Delivered Ground Refueling
MCT 1.3.3.3.1	Conduct Aviation Operations from Expeditionary Sea-Based Sites

**MCT 1.3.4.1      Conduct Combat Assault Transport****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.1.3.2.3 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 1.1.1.2 Terrain Elevation.**

Height of immediate terrain in reference to sea level. Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

**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:**

**{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:**

**Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 11/9/6/3 Crews NS LLL Core Skill Proficient
- 11/9/6/3 Crews GTR Core Skill Proficient
- 11/9/6/3 Crews Aerial Gunnery Core Skill Proficient

**Advanced Capability:**

- Perform the baseline requirements while executing an air assault using 5 or more assault support aircraft with integrate fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment)

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

- 7/6/4/2 Crews NS LLL Core Skill Proficient
- 7/6/4/2 Crews GTR Core Skill Proficient
- 7/6/4/2 Crews Aerial Gunnery Core Skill Proficient

**Baseline Capability:**

- Capable of supporting air assault in low threat environment.
- Capable of supporting long range raid in low threat environment.
- Conducted an air assault with integrated fires, escort, and troops, with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment)

**Output Standards:**

- 21/16/12/5 Sorties daily sustained during contingency/combat operations

**MCT 4.3.41**      **Conduct Heavy Rotary Wing Air Delivery (AD)**

**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.1.3.2.3 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 1.1.1.2 Terrain Elevation.**

Height of immediate terrain in reference to sea level. Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

**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:**

**{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:**

**Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 11/9/6/3 Crews NS LLL Core Skill Proficient
- 11/9/6/3 Crews GTR Core Skill Proficient
- 11/9/6/3 Crews Aerial Gunnery Core Skill Proficient
- 11/9/6/3 Crews External Core Skill Proficient

**Advanced Capability:**

- Conduct the baseline requirement executing internal or external in-flight transportation of heavy equipment and supplies to remote areas or expeditionary sites with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

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

- 7/6/4/2 Crews NS LLL Core Skill Proficient
- 7/6/4/2/ Crews GTR Core Skill Proficient
- 7/6/4/2/ Crews Aerial Gunnery Core Skill Proficient
- 7/6/4/2/ Crews External Core Skill Proficient

**Baseline Capability:**

- Capable of providing aviation support for foreign humanitarian assistance.
- Capable of moving personnel, supplies, and equipment to landing zones in a permissive environment.
- Conducted internal or external in-flight transportation of heavy equipment and supplies to austere landing zones with integrated fires, escorts, and troops with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment).

**Output Standards:**

- 21/16/12/5 Sorties daily sustained during contingency/combat operations

**MCT 6.2.1.1      Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)****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.1.3.2.3 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 1.1.1.2 Terrain Elevation.**

Height of immediate terrain in reference to sea level. Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

**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:**

**{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:**

**Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standards (CMMR):**

- 7/6/4/2 Crews NS LLL Core Skill Proficient
- 7/6/4/2 Crews GTR Core Skill Proficient
- 7/6/4/2 Crews Aerial Gunnery Core Skill Proficient
- 7/6/4/2 Crews External Core Skill Proficient
- 7/6/4/2 Crews HAAR Core Skill Proficient

**Advanced Capability:**

- Conduct the baseline requirement executing a TRAP exercise or operation with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

**Baseline Training Standards (70% CMMR):**

- 4/4/2/1 Crews NS LLL Core Skill Proficient
- 4/4/2/1 Crews GTR Core Skill Proficient
- 4/4/2/1 Crews Aerial Gunnery Core Skill Proficient
- 4/4/2/1 Crews External Core Skill Proficient
- 4/4/2/1 Crews HAAR Core Skill Proficient

**Baseline Capability:**

- Capable of supporting continuous alert operations with a section.
- Capable of sustaining 8 daily sorties.
- Capable of supporting TRAP operations in a low threat environment.
- Conducted a TRAP exercise or operation with integrated fires, escorts, and troops with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment).

**Output Standards:**

- 21/16/12/5 Sorties daily sustained during contingency/combat operations



## **MCT 6.2.2**      **Conduct Air Evacuation**

### **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.1.3.2.3 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 1.1.1.2 Terrain Elevation.**

Height of immediate terrain in reference to sea level. Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

#### **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:**

**{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:**

#### **Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

#### **Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

#### **Advanced Training Standard (CMMR):**

- 11/9/6/3 Crews NS LLL Core Skill Proficient
- 11/9/6/3 Crews GTR Core Skill Proficient
- 11/9/6/3 Crews Aerial Gunnery Core Skill Proficient

#### **Advanced Capability:**

- Conduct the baseline requirement executing air evacuation exercise or operation with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

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

- 7/6/4/2 Crews NS LLL Core Skill Proficient
- 7/6/4/2 Crews GTR Core Skill Proficient
- 7/6/4/2 Crews Aerial Gunnery Core Skill Proficient

#### **Baseline Capability:**

- Capable of supporting AE operations in low threat environments.
- Capable of supporting Noncombatant Evacuation Operations.
- Capable of conducting Casualty Evacuation.
- Capable of supporting continuous alert operations.
- Conducted air evacuation operations with integrated fires, escorts, and troops with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment).

### **Output Standards:**

- 21/16/12/5 Sorties daily sustained during contingency/combat operations

**Core Plus****MCT 1.3.3.3.1      Conduct Aviation Operations From Expeditionary Sea-Based Sites****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:****{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:****Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standards (CMMR):**

- 6/5/3/2 Crews NS LLL Core Skill Proficient
- 6/5/3/2 Crews GTR Core Skill Proficient
- 6/5/3/2 Crews Aerial Gunnery Core Skill Proficient
- 6/5/3/2 Crews Day and Night Systems Carrier Qualified

**Advanced Capability:**

- Demonstrate the ability to conduct expeditionary sea-based site operations into an objective area with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

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

- 4/3/2/1 Crews NS LLL Core Skill Proficient
- 4/3/2/1 Crews GTR Core Skill Proficient
- 4/3/2/1 Crews Aerial Gunnery Core Skill Proficient
- 4/3/2/1 Crews Day and Night Systems Carrier Qualified

**Baseline Capability:**

- Demonstrate the ability to conduct expeditionary sea-based site operations into an objective area with integrated fires, escorts, and troops with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment).

**Output Standards:**

- 21/16/12/5 Sorties daily sustained during contingency/combat operations

#### **MCT 1.3.4.1.1      Conduct Airborne Rapid Insertion/Extraction**

##### **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.1.3.2.3 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 1.1.1.2 Terrain Elevation.**

Height of immediate terrain in reference to sea level. Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

##### **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:**

**{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:**

##### **Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

##### **Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

##### **Advanced Training Standard (CMMR):**

- 6/5/3/2 Crews NS LLL Core Skill Proficient
- 6/5/3/2 Crews GTR Core Skill Proficient
- 6/5/3/2 Crews Aerial Gunnery Core Skill Proficient
- 6/5/3/2 Crews HIE Core Plus Skill Proficient

##### **Advanced Capability:**

- Demonstrate the ability to conduct tactical airborne rapid insertion/extraction operations with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

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

- 4/3/2/1 Crews NS LLL Core Skill Proficient
- 4/3/2/1 Crews GTR Core Skill Proficient
- 4/3/2/1 Crews Aerial Gunnery Core Skill Proficient
- 4/3/2/1 Crews HIE Core Plus Skill Proficient

##### **Baseline Capability:**

- Capable of conducting a rapid insertion/extraction using fast rope, rappelling, paraops, helocast, or special insertion and extraction techniques.
- Demonstrate the ability to conduct tactical airborne rapid insertion/extraction operations with integrated fires, escorts, and troops with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment).

##### **Output Standards:**

- 21/16/12/5 Sorties daily sustained during contingency/combat operations

**MCT 1.3.4.2.1      Provide Aviation-Delivered Ground Refueling****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 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:**

**{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Reserve Sqdn (8A/C)/Det (4 A/C)}:**

**Personnel:**

- 11/9/6/4 aircrews formed
- DRRS-MC personnel-level of 2 or better:  $\geq 80\%$  personnel strength and  $\geq 75\%$  critical MOS fill IAW MCO 3000.13

**Equipment:**

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/2 CH-53K aircraft)
- Operational support equipment fully supports MCT

**Advanced Training Standard (CMMR):**

- 6/5/3/2 Crews NS LLL Core Skill Proficient
- 6/5/3/2 Crews GTR Core Skill Proficient
- 6/5/3/2 Crews Aerial Gunnery Core Skill Proficient

**Advanced Capability:**

- Demonstrate the ability to provide aviation-delivered ground refueling to combat aircraft or tactical vehicles in an austere environment with integrated fires, escorts, and troops with squadron level planning in a medium threat environment within the last 12 months (or since reset from last deployment).

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

- 4/3/2/1 Crews NS LLL Core Skill Proficient
- 4/3/2/1 Crews GTR Core Skill Proficient
- 4/3/2/1 Crews Aerial Gunnery Core Skill Proficient

**Baseline Capability:**

- Capable of providing aviation-delivered ground refueling utilizing tactical bulk fuel dispensing system.
- Capable of establishing forward-arming and refueling (FARP) sites in a permissive environment.
- Capable of resupplying FARP sites and forward-operating bases.
- Demonstrate the ability to provide aviation-delivered ground refueling to combat aircraft or tactical vehicles in austere environments with integrated fires, escorts, and troops with squadron level planning in a low threat environment within the last 12 months (or since reset from last deployment).

**Output Standards:**

- Provide (4/2/2/2) refueling point capable of transferring 45gp

## APPENDIX B – REFERENCE SOURCES

### ABBREVIATIONS

<b>CH-53K</b>	
<b>STAGE/SKILL ABBREVIATIONS</b>	
<b>CORE SKILLS (2000 Phase)</b>	
<b>ABBREVIATION</b>	<b>DESCRIPTION</b>
<b>FAM</b>	Familiarization / Instrument
<b>INT</b>	Internal Loading
<b>FORM</b>	Formation
<b>CAL</b>	Confined Area Landing
<b>TERF</b>	Terrain Flight
<b>EXT</b>	External Operations
<b>HAAR</b>	Aerial Refueling
<b>FCLP</b>	Field Carrier Landing Practice
<b>AG</b>	Aerial Gunnery
<b>GTR</b>	Ground Threat Reaction
<b>TAC</b>	Tactics
<b>NS HLL</b>	Night Systems High Light Level
<b>NS LLL</b>	Night Systems Low Light Level
<b>MISSION SKILLS (3000 Phase)</b>	
<b>ABBREVIATION</b>	<b>DESCRIPTION</b>
<b>AT</b>	Assault Transport
<b>AD(E)</b>	External Aerial Delivery
<b>TRAP</b>	Tactical Recovery of Aircraft and Personnel
<b>AE</b>	Air Evacuation
<b>CORE PLUS SKILLS (4000 Phase)</b>	
<b>ABBREVIATION</b>	<b>DESCRIPTION</b>
<b>HIE</b>	Helicopter Insertion Extraction
<b>EXT</b>	Terrain Flight External
<b>GTR</b>	Ground Threat Reaction
<b>DM</b>	Defensive Measures
<b>BI</b>	Provide Aviation Delivered Battlefield Illumination
<b>FCLP</b>	Field Carrier Landing Practice
<b>CBRN</b>	Chemical, Biological, Radiological and Nuclear
<b>MTG</b>	Moving Target Gunnery
<b>TG</b>	Tail Gunnery
<b>U CQ</b>	Unaided Carrier Qualification
<b>CQ</b>	Carrier Qualification
<b>TAC</b>	Tactics
<b>MISSION PLUS SKILLS (4000 Phase)</b>	
<b>ABBREVIATION</b>	<b>DESCRIPTION</b>
<b>RIE</b>	Raid Insertion/Extraction
<b>ADGR</b>	Aviation-Delivered Ground Refueling
<b>SEA</b>	Expeditionary Operations Sea Based

## TRAINING RESOURCE REQUIREMENTS

1. The training resource requirements section captures those training resources required to support CH-53 T&R events, by stage. Additionally, Pilot Training Officers can use this section as a reference for coordination required, by stage, to execute T&R events. The items listed are those resources not resident in an HMH T/O&E but are required to make Core Competent Crews. The training resource requirements section (like the T&R itself) does not take geographic location(s) of a unit into account, rather what is required to effectively train CH-53 combat ready crews. Any training resource not available should be annotated and forwarded to TECOM, Aviation Training Division as a training resource shortfall.

### 2. FAM/INST Stage

a. Airport facilities that support helicopter day and night operations.

b. Facilities should include at a minimum but are not limited to; runway with a minimum of 3000 ft, helicopter specific practice hover area, practice autorotation course rules/lane, practice pattern work course rules for all FAM maneuvers, instrument facilities to include SIDs, holding, non- precision TACAN, VOR and ASR instrument approaches available for actual and practice use, precision ILS and PAR instrument approaches available for actual and practice use.

3. FORM Stage. Special use airspace/training area available day and night for Tactical Formation maneuvering.

4. CAL Stage. Confined area and/or mountain area training area with landing zones capable of supporting CH-53 single ship, section and division landings both day and night.

### 5. TERF Stage

a. Special use airspace/training area capable of supporting CH-53 low level and contour flight operations below 200ft both day and night.

b. Airspace shall include TERF routes with a minimum of 50nm and 6 checkpoints.

c. TERF area shall have confined area and/or mountain area landing zones capable of supporting CH-53 division landings and external operations.

### 6. EXT Stage

a. Special use airspace/training area capable of supporting CH-53 external, low level and contour flight operations below 200ft both day and night. Airspace should include TERF routes with a minimum of 50nm and 6 checkpoints to the maximum extent possible.

b. TERF area shall have confined area and/or mountain area landing zones capable of supporting CH-53 division landings and external operations.

c. 8 external loads, 4 SP, 4 DP. Loads should vary in size from 2,000lbs to 36,000lbs.

d. HST to support external operations for a minimum 8 hours per week.

### 7. GTR Stage

a. Special use EW range/airspace/training area capable of supporting CH-53 low level and contour flight operations below 200ft both day and night.

b. Airspace shall include TERF routes with a minimum of 50nm and 6 checkpoints. TERF area shall have confined area and/or mountain area landing zones capable of supporting CH-53 division landings and external operations. Flare and chaff capable range available both day and night.

c. Ground based non radar threat simulator (smokey sams, AAR-47 simulator, pyrotechnics) available 4 times per month for a minimum of 12 hours total.

d. Radar emitter with threat systems to include electromagnetic and ground based threat simulation. Emitter should be search, acquisition, and track capable. Emitter should be able to provide radar resolution cell feedback to aircrew.

8. HAAR Stage

- a. KC-130 support for a minimum 4 hours a week.
- b. Special use airspace capable of conducting HAAR.

9. CQ/MISSION Stage. LHD/LHA shipping available a minimum 8 hours per month for both day and night Carrier Qualification operations.

10. TAC/MISSION Stage

- a. Special use airspace/training area capable of supporting CH-53 low level and contour flight operations below 200ft both day and night. Airspace shall include TERF routes with a minimum of 50nm and 6 checkpoints.
- b. TERF area shall have confined area and/or mountain area landing zones capable of supporting CH-53 division landings and external operations.
- c. Expendable capable range.
- d. Ground based non radar threat simulator (smokey sams, AAR-47 simulator, pyrotechnics) available a minimum of 4 times per month. Aerial gunnery laser safe range with SDZ approved for .50 CAL for day and night shooting. Targets should range in size from personnel targets to APC size targets.
- e. KC-130 support for a minimum of 8 hours a week. f. Special use airspace capable of conducting HAAR.

11. AG Stage. Aerial gunnery laser safe range with SDZ approved for .50 CAL for day and night shooting. Targets should range in size from personnel targets to APC size targets.

12. HIE Stage. Supporting units available to conduct para ops, helocast, fast rope, rappelling, and SPIE.

13. DM Stage

- a. Special use airspace/training area capable of supporting CH-53 Low level and contour flight operations below 200ft.
- b. Expendable capable range.
- c. Tactical fixed wing aircraft adversary available a minimum of 6 times per year for a minimum of 12 hours.
- d. Tactical utility or attack helicopter adversary available a minimum of 6 times per year for a minimum of 12 hours.

BLANK



HMH CH-53K Squadron 16 Aircraft

HMH CH-53K Squadron 16 Aircraft																							
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	T/O CC	T/O AOG	STAFFING GOAL (PILOTS)	CREWS FORMED	HAC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD (CMMR)	BASELINE TRAINING STANDARD (70% CMMR)	PILOT	COPILOT	CC	AO	PAA	MC	# MC											
MCT 1.3.4.1	CAT	Conduct Combat Assault Transport	21	11	7	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11	21	38	26	26	34	11	16	9	6	4	3
MCT 4.3.4	AD	Conduct Air Delivery	21	11	7	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11											
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft	21	7	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11											
MCT 6.2.2	AE	Conduct Air Evacuation	21	11	7	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11											
COREPLUS																							
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	21	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11											
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	4	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11											
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	21	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	70%	11											
PARA 1.3			PARA 1.6	PARA 1.7						PARA 1.2	MET Worksheet		PARA 1.6	PARA 1.2			MET Worksheet	PARA 1.7					

HMH CH-53K Squadron (-) 12 Aircraft

HMH CH-53K Squadron(-) 12 Aircraft																							
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	T/O CC	T/O AOG	STAFFING GOAL (PILOTS)	CREWS FORMED	HAC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD (CMMR)	BASELINE TRAINING STANDARD (70% CMMR)	PILOT	COPILOT	CC	AO	PAA	MC	# MC											
MCT 1.3.4.1	CAT	Conduct Combat Assault Transport	16	9	6	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8	16	30	20	20	27	9	12	6	4	3	2
MCT 4.3.4	AD	Conduct Air Delivery	16	9	6	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8											
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft	16	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8											
MCT 6.2.2	AE	Conduct Air Evacuation	16	9	6	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8											
CORE PLUS																							
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	16	5	3	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8											
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	2	5	3	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8											
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	16	5	3	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	70%	8											
PARA 1.3			PARA 1.6	PARA 1.7						PARA 1.2	MET Worksheet		PARA 1.6	PARA 1.2			MET Worksheet	PARA 1.7					

HMH CH-53K Reserve Squadron 8 Aircraft

HMH CH-53K Reserve Squadron 8 Aircraft																							
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	T/O CC	T/O AOG	STAFFING GOAL (PILOTS)	CREWS FORMED	HAC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD (CMMR)	BASELINE TRAINING STANDARD (70% CMMR)	PILOT	COPILOT	CC	AO	PAA	MC	# MC											
MCT 1.3.4.1	CAT	Conduct Combat Assault Transport	12	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5	12	19	13	13	17	6	8	5	3	2	1
MCT 4.3.4	AD	Conduct Air Delivery	12	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5											
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft	12	4	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5											
MCT 6.2.2	AE	Conduct Air Evacuation	12	6	4	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5											
COREPLUS																							
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	12	3	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5											
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	2	3	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5											
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	12	3	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	70%	5											
PARA 1.3			PARA 1.6	PARA 1.7						PARA 1.2	MET Worksheet		PARA 1.6	PARA 1.2			MET Worksheet	PARA 1.7					

HMH CH-53K Detachment 4 Aircraft

HMH CH-53K Detachment 4 Aircraft																							
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT	T/O PILOTS	T/O CC	T/O AOG	STAFFING GOAL (PILOTS)	CREWS FORMED	HAC	SECTION LEADER	DIVISION LEADER	FLIGHT LEADER	AIR MISSION COMMANDER
				ADVANCED TRAINING STANDARD (CMMR)	BASELINE TRAINING STANDARD (70% CMMR)	PILOT	COPILOT	CC	AO	PAA	MC	# MC											
MCT 1.3.4.1	CAT	Conduct Combat Assault Transport	5	3	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2	5	8	6	6	8	4	4	3	2	1	1
MCT 4.3.4	AD	Conduct Air Delivery	5	3	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2											
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft	5	2	1	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2											
MCT 6.2.2	AE	Conduct Air Evacuation	5	3	2	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2											
CORE PLUS																							
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	5	2	1	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2											
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	2	2	1	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2											
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	5	2	1	HAC,MSP	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	4	70%	2											
PARA 1.3			PARA 1.6	PARA 1.7						PARA 1.2	MET Worksheet		PARA 1.6	PARA 1.2			MET Worksheet	PARA 1.7					

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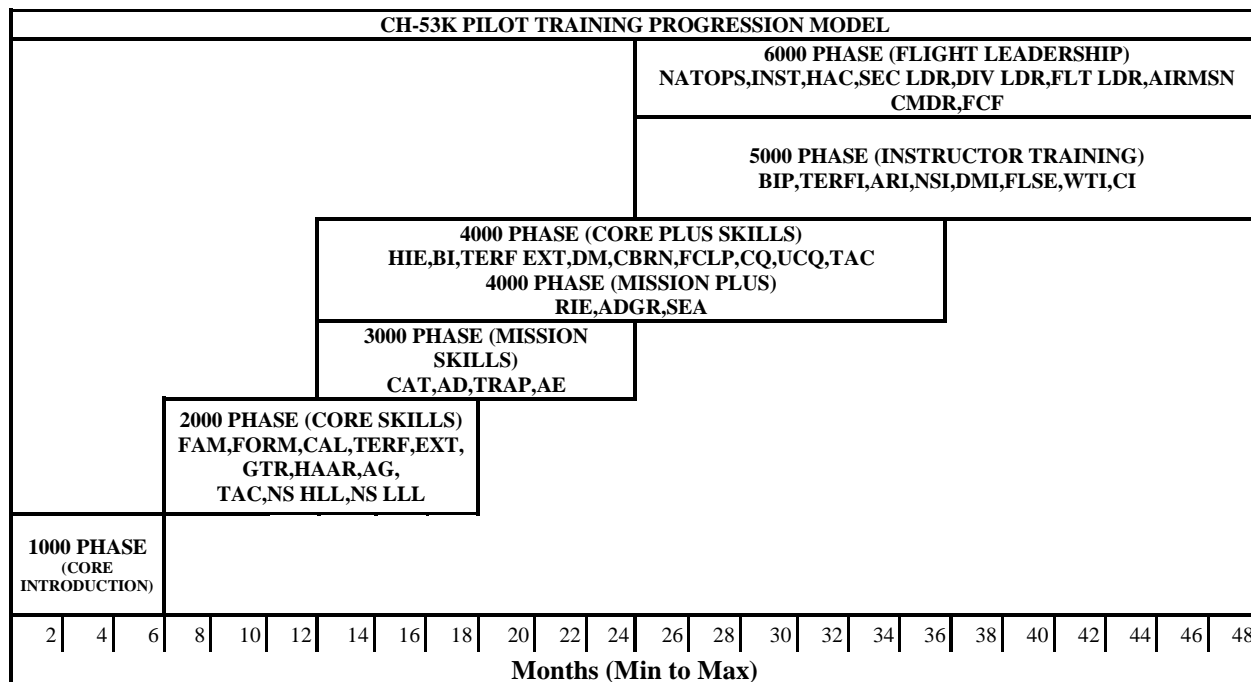
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## CHAPTER 2

### CH-53K PILOT 7511

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 war fighting capabilities.

2.1 **TRAINING PROGRESSION MODEL.** This model represents the recommended training progression for the average 7511 crewmember. Units should use the model as a point of departure to generate individual training plans.



\*Maximum time to train in each phase is based on monthly minimum flight hour requirements as delineated in the Aviation Program Manual.

## 2.2 PROGRAMS OF INSTRUCTION (POI)

2.2.1 **Basic (B).** Basic, Transition, Conversion Model and Series Conversion pilots shall be assigned to the Basic POI. The squadron training officer shall ensure all Electronic Aircrew Training Forms (EATFs) completed in MSHARP and are annotated on the Pilot APR Tracking Matrix in section 3 of the Aircrew Performance Record (APR) for all initial or refresher events. These ATF's will replace ATF's previously entered in section 3.

CH-53K PILOT Basic POI (Average Time-to-Train)		
WEEKS	COURSE	PERFORMING ACTIVITY
24	CH-53K Core Introduction	USMC CH-53K Fleet Replacement Squadron (FRS)
40	Core Training	Tactical Squadron
5	Mission Training	Tactical Squadron

2.2.2 **Series Conversion (S).** CH-53K Series Conversion pilots will fly those 1000-6000 level flights designated by a S in the event description. When the S coded events within a stage of training are complete, the pilot may be credited with the entire stage of training. If the series conversion pilot has no previous proficiency in a stage or particular event (i.e. event Never Been Attempted (NBA)), then the series conversion shall fly the entire stage or all events not previously attempted. Upon completion of the HAC syllabus, series conversions may be re-designated to their highest previous flight leadership designation at the discretion of the Squadron Commanding Officer.

2.2.3 Conversion (C). Conversion pilots shall complete at a minimum all flight events designated by an S in the event description as well as all applicable academic events. The Squadron Commanding Officer may add additional training to fit the experience of the conversion pilot as necessary. If the conversion pilot has no similar previous proficiency in a stage or particular event (i.e. a UH-1 Pilot conducting HAAR or externals), then the conversion pilot should fly the entire stage or all events not previously attempted. Upon completion of the HAC syllabus, conversion pilots may be re-designated to their highest previous flight leadership designation at the discretion of the Squadron Commanding Officer.

2.2.4 Refresher (R). CH-53K pilots requiring FRS Refresher Training IAW NAVMC 3500.14, Aviation T&R Program Manual shall fly the appropriate 1000 level R coded events per this manual at the FRS.

CH-53K PILOT Refresher POI (Average Time-to-Train)		
WEEKS	COURSE	PERFORMING ACTIVITY
6	CH-53K Core Introduction	USMC CH-53K FRS
10	Core Training	Tactical Squadron
5	Mission Training	Tactical Squadron

2.2.5 Squadron Refresher Syllabus (2000-8000). Current pilots who have previously attained the 7566 MOS conducting a Series Conversion who have not exceeded 485 days since their last CH-53 flight will conduct the Series Conversion at their Tactical Squadron. The Squadron Refresher Syllabus is predicated on the experience of the refresher pilot. A pilot in the squadron refresher syllabus should fly all R coded events. The Squadron Commanding Officer may tailor the squadron refresher syllabus to fit the experience of the refresher pilot per the squadron standardization board recommendations and NAVMC 3500.14, Aviation T&R Program Manual. When the R coded events within a stage of training are complete, the pilot may be credited with the entire stage of training. This assumes the Refresher pilot has previous proficiency in a stage of training. If the Refresher pilot has no previous proficiency in a stage or particular event (i.e. event Never Been Attempted (NBA)), then the Refresher shall fly the entire stage or all events not previously attempted.

2.2.6 Modified Refresher (MR). CH-53K pilots requiring FRS Refresher Training IAW NAVMC 3500.14, Aviation T&R Program Manual shall fly the appropriate 1000 level MR coded events per this manual at the FRS.

CH-53K PILOT Modified Refresher POI (Average Time-to-Train)		
WEEKS	COURSE	PERFORMING ACTIVITY
4	CH-53K Core Introduction	USMC CH-53K FRS

## 2.3 PROFICIENCY & CURRENCY

2.3.1 Event Proficiency. Event proficiency is defined as successful completion of the performance standard as defined by this manual. Event performance standards may not be waived or modified. 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.

NS Proficiency: Aircrew who are still NS qualified but lose proficiency in any other NS event may regain proficiency by flying with another pilot that is NS qualified and proficient in that NS flight event.

Regain Proficiency: Individuals regain event proficiency by successfully demonstrating the event's performance standards. A proficient aircrew person must be in the flight for combat leadership events and must be within the aircraft for non-combat leadership events.

The crew position of the proficient individual is up to the discretion of the CO in accordance with risk management.

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.

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 CO.

**Proficiency Status.** Proficiency is a “Yes/No” status by skill assigned to an individual. When an individual attains and maintains Core Skill 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 set. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for aircrew individual type mission profiles can be found in Chapter 3 of the Aviation Program Manual.

## 2.4 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATION (RCQD) TABLES

The table below delineates T&R Events required to be proficient or waived to attain Requirements, Certifications, 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 any qualification event causes the associated qualification to be lost. Regaining a qualification requires completing delinquent R-coded events associated with that qualification. Waiving of all Required Events leading to a Requirement, Certification, Qualification, or Designation, is not allowed.

CH-53K PILOT REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)	
INDIVIDUAL CH-53K PILOT QUALIFICATION REQUIREMENTS	
Qualification	Event Requirements
NATOPS	6000,6001,6002,6003,6100,6101 and IAW CNAF 3710.7.
Instrument	6005,6006,6102 and IAW CNAF 3710.7.
TERF	2380,2310,2311R
NSQ HLL	2190-2198,S2105,2120R,2220,2221R,2320,2321R,2920R
NSQ-LLL	NSQ HLL,2199,S2106,2230,2231R,2330,2331R,2930R
DM	4580-4584,4510R,4511R
UNAIDED CQ	4742R
CQ	4781,4711R,4742R
INDIVIDUAL CH-53K PILOT QUALIFICATION REQUIREMENTS	
Designation	Event Requirements
H2P	Core Introduction Phase complete,1902
HAC	Core Phase and Mission Phase complete,S5100,S5101,5110,6120,6121,6122R
SEC LDR	6200,6201,6202,6203R,8661,8662,8663,8664
DIV LDR	6300,6301,6302R,8688
FLT LDR	6400,8685,8686,8687
AIR MSN CDR	6500,6580
FLSE	Per MAWTS-1 WTI Course Catalog
TERFI	5200,5201,5202; Per MAWTS-1 WTI Course Catalog
ARI	5300,5301; Per MAWTS-1 WTI Course Catalog
DMI	5700,5701,5702; Per MAWTS-1 WTI Course Catalog
NSI	5800,5801,5802,5803,5804,5805; Per MAWTS-1 WTI Course Catalog
NSFI	5600,5601,5602,5603; Per MAWTS-1 WTI Course Catalog
WTI	Per MAWTS-1 WTI Course Catalog
CRMI	See CNAFINST 1542.7 Series
CRMF	See CNAFINST 1542.7 Series
FRSI	5500, 5502,5503,5504,5505,5506
CSII	Recommended by Squadron CO, Designated by Model Manager CO
NE	Designated by Model Manager CO
NI	6100 Evaluated by Model Manager, Designated by Squadron CO
ANI	6100 given by a Squadron NATOPS Instructor

NII	Designated by Squadron CO
FCP	6610-6617, IAW CNAFINST 4790 and command specific directives

## 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. The PUI and PTO shall ensure that the appropriate academic/ground training event is manually updated in MSHARP and logged in the APR.

**Requirements.** The purpose of the academic syllabus is to ensure that required academic courses for each phase/stage of training are completed and logged in MSHARP for each Crew Member. A summary of academic classes that is required for all of the phases of training (0000-8000) are listed below with their corresponding T&R code. Where indicated, standardized academic training materials exist and may be obtained from the sponsoring activity.

The academic/ground training shall be complete IAW the phase and/or stage requirements and prerequisites. Upon completion, the PUI shall report to the appropriate Operations Department (S-3) representative (typically the PTO) or designated representative(s), who will then manually update the training code in MSHARP and log the academic/ground training event in the appropriate section APR, using the format listed in enclosure (1) of this document.

Annual academic/ground training events shall be updated in MSHARP each time they are completed IAW the refly interval.

Additionally, academic/ground training classes not listed as requirements in the T&R should be logged in the appropriate section of the APR using enclosure (1).

Upon signature of this manual, the squadron operations department will manually update and baseline all academic requirements, in both MSHARP and APR(s) for all phases and stages that aircrew have previously completed, at the discretion of the Squadron Commanding Officer.

T&R CODE	ACADEMIC SYLLABUS
	FRS ACADEMIC PHASE (0001-1034)
CBT-0001	INTRO TO THE CH-53K
CBT-0002	POWER PLANTS
CBT-0003	ROTOR SYSTEM
CBT-0004	TRANSMISSION SYSTEM
CBT-0005	FUEL SYSTEM
CBT-0006	SECONDARY POWER SYSTEM
CBT-0007	ELECTRICAL SYSTEM
CBT-0008	LIGHTING SYSTEMS
CBT-0009	HYDRAULIC POWER SYSTEM
CBT-0010	FLIGHT CONTROL SYSTEM
CBT-0011	LANDING GEAR SYSTEM
CBT-0012	BLADE / PYLON FOLD SYSTEM
CBT-0013	AVIONICS MANAGEMENT SYSTEM
CBT-0014	NAVIGATION SYSTEM
CBT-0015	INTEGRATED VEHICLE HEALTH MANAGEMENT SYSTEM
CBT-0016	WARNINGS, CAUTIONS, AND ADVISORIES
CBT-0017	AIRCRAFT FURNISHINGS AND MISSION SYSTEMS
CBT-0018	COMMUNICATION SYSTEM
CBT-0019	FIRE PROTECTION AND EMERGENCY SYSTEMS
CBT-0020	AIRCRAFT SURVIVABILITY EQUIPMENT (ASE)
CBT-0021	AIRCRAFT PREFLIGHT INSPECTION
CBT-0022	WEIGHT AND POWER
CBT-0023	AIRCRAFT STARTUP AND SHUTDOWN CHECKLIST
CBT-0024	INTRODUCTION TO FAMILIARIZATION FLIGHT STAGE / LOCAL COURSE RULES
CBT-0025	INTRODUCTION TO FORMATION FLIGHT STAGE
CBT-0026	INTRODUCTION TO THE CONFINED AREA LANDING STAGE

CBT-0027	INTRODUCTION TO THE EXTERNAL CARGO OPERATIONS STAGE
CBT-0028	INTRODUCTION TO THE TERRAIN FLIGHT STAGE
ACAD-0100	GROUND SCHOOL INTRO IN-BRIEF
ACAD-0101	INTRODUCTION TO THE CH-53K
ACAD-0102	POWER PLANTS
ACAD-0103	ROTOR SYSTEMS
ACAD-0104	TRANSMISSION SYSTEM
ACAD-0105	FUEL SYSTEM
ACAD-0106	SECONDARY POWER SYSTEM
ACAD-0107	ELECTRICAL SYSTEMS
ACAD-0108	LIGHTING SYSTEMS
ACAD-0109	HYDRAULIC POWER SYSTEMS
ACAD-0110	FLIGHT CONTROL SYSTEM
ACAD-0111	LANDING GEAR SYSTEM
ACAD-0112	BLADE / PYLON FOLD SYSTEM
ACAD-0113	AVIONICS MANAGEMENT SYSTEM
ACAD-0114	NAVIGATION SYSTEM
ACAD-0115	INTEGRATED VEHICLE HEALTH MANAGEMENT SYSTEM
ACAD-0116	WARNINGS, CAUTIONS, AND ADVISORIES
ACAD-0117	AIRCRAFT FURNISHINGS AND MISSION SYSTEMS
ACAD-0118	COMMUNICATION SYSTEM
ACAD-0119	FIRE PROTECTION AND EMERGENCY SYSTEMS
ACAD-0120	AIRCRAFT SURVIVABILITY EQUIPMENT (ASE)
ACAD-0122	WEIGHT AND POWER
ACAD-0123	AIRCRAFT STARTUP AND SHUTDOWN CHECKLIST
ACAD-0124	INTRODUCTION TO FAMILIARIZATION FLIGHT STAGE /LOCAL COURSE RULES EXAM
ACAD-0130	INTRODUCTION TO JMPS
ACAD-0131	JMPS UPC VFR ROUTE PLANNING
ACAD-0132	JMPS UPC CARGO PLANNING
ACAD-0133	JMPS UPC ADDITIONAL PLANNING
ACAD-0134	JMPS UPC IFR/RNAV ROUTE PLANNING
LAB-1001	AIRCRAFT SYSTEMS I
LAB-1002	AIRCRAFT SYSTEMS II
LAB-1003	AIRCRAFT SYSTEMS III
LAB-1004	AIRCRAFT SYSTEMS IV
LAB-1013	AVIONICS MANAGEMENT SYSTEMS
LAB-1014	NAVIGATION SYSTEM
LAB-1017	AIRCRAFT FURNISHINGS AND MISSION SYSTEMS
LAB-1018	COMMUNICATION SYSTEM
LAB-1021	REVIEW PREFLIGHT INSPECTION 1
LAB-1022	REVIEW PREFLIGHT INSPECTION 2
LAB-1030	INTRODUCTION TO JMPS
LAB-1031	JMPS UPC VFR ROUTE PLANNING
LAB-1032	JMPS UPC CARGO PLANNING
LAB-1033	JMPS UPC ADDITIONAL PLANNING
LAB-1034	JMPS UPC IFR/RNAV ROUTE PLANNING
<b>T&amp;R CODE</b>	<b>ACADEMIC SYLLABUS</b>
	<b>CORE SKILL PHASE (2000-2999)</b>
	<b>FAM STAGE</b>
ACAD-2180	(U) CH-53K GPS TACTICAL ROUTE PLANNING(*)
ACAD-2181	(U) CH-53K MULTIFUNCTION DISPLAY (MFCD)(*)
ACAD-2182	(U) CH-53K ARC-210 HAVEQUICK/SINGARS(*)
ACAD-2183	(U) CH-53K JMPS CARGO PLANNING TOOL/INTERNAL CARGO(*)
ACAD-2184	(U) CH-53K FLIR(*)
ACAD-2185	(U) AN/AVS-7 CH-53 ANVIS HUD(*)
	<b>FORM STAGE</b>
ACAD-2186	(U) CH-53 TACFORM
	<b>CAL STAGE</b>
ACAD-2280	(U) DESERT AREA OPERATIONS(*)
ACAD-2281	(U) MOUNTAIN OPERATIONS(*)
ACAD-2282	(U) TECHNIQUES IN A REDUCED VISIBILITY LANDING(*)
	<b>TERF STAGE</b>

ACAD-2380	(U) ASD TERRAIN FLIGHT (TERF)
<b>EXT STAGE</b>	
ACAD-2480	(S) HEAVY LIFT OPERATIONS(*)
ACAD-2481	(U) ASSAULT SUPPORT TO ARTILLERY
<b>GTR STAGE</b>	
ACAD-2580	(S) CH-53K APR-39(*)
ACAD-2581	(S) ALE-47 (*)
ACAD-2582	(S) CH-53K DIRCM(*)
ACAD-2583	(S) CH-53 MISSILE WARNING SYSTEM(*)
ACAD-2584	(S) IR SAM THREAT TO ASSAULT SUPPORT(*)
ACAD-2585	(S) ADA THREAT TO ASSAULT SUPPORT(*)
ACAD-2586	(S) RF SAM(*)
ACAD-2587	(S) RADAR PRINCIPLES
ACAD-2588	(U) CH-53 DM/GTR I (GTR)
ACAD-2589	(S) SURFACE THREAT TO THE MAGTF
<b>HAAR STAGE</b>	
ACAD-2680	(U) HAAR(*)
<b>AG STAGE</b>	
ACAD-2880	(U) WEAPONS EMPLOYMENT TECHNIQUES(*)
<b>TAC STAGE</b>	
ACAD-2980	(U) OBJECTIVE AREA PLANNING(*)
ACAD-2981	(S) ROE
ACAD-2982	(U) EXECUTION CHECKLIST
ACAD-2983	(U) PROBLEM FRAMING
ACAD-2984	(S) ASSAULT SUPPORT ESCORT TACTICS
<b>HLL STAGE</b>	
ACAD-2190	(U) ASSAULT AN/ANVIS-9 COMPONENTS AND PREFLIGHT PROCEDURES
ACAD-2191	(U) NVG SYSTEMS AND IMAGE CHARACTERISTICS
ACAD-2192	(U) THE NIGHT OPERATIONAL ENVIRONMENT
ACAD-2193	(U) NVG MISPERCEPTIONS AND ILLUSIONS
ACAD-2194	(U) NVD ROUTE PLANNING CONSIDERATIONS
ACAD-2195	(U) NIGHT OPERATIONS AND PLANNING AIDS
ACAD-2196	(U) HUMAN FACTORS
ACAD-2197	(U) CIRCADIAN RHYTHM AND FATIGUE
ACAD-2198	(U) INTRO TO NVG TACTICAL EMPLOYMENT
<b>LLL STAGE</b>	
ACAD-2199	(U) BATTLEFIELD ILLUMINATION AND ITG PLANNING CONSIDERATIONS

\* Denotes annual academic training requirements.

T&R CODE	ACADEMIC SYLLABUS
	MISSION SKILL PHASE (3000)
<b>CAT STAGE</b>	
ACAD-3080	(U) R2P2
ACAD-3081	(S) CONTESTED EMS OPERATIONS AND MITIGATION
ACAD-3082	(U) NEO EXECUTION
ACAD-3083	(U) ACE INTELLIGENCE PREPARATION OF THE BATTLE SPACE
<b>TRAP STAGE</b>	
ACAD-3084	(S) PERSONNEL RECOVERY
ACAD-3085	(S) TRAP TTPS
<b>AE STAGE</b>	
ACAD-3086	(U) CASEVAC

\* Denotes annual academic training requirements.

T&R CODE	ACADEMIC SYLLABUS
	CORE PLUS SKILL PHASE (4000)
<b>HIE STAGE</b>	
ACAD-4180	(U) HIE
<b>TERF EXT/ INDEPENDT HOOK EXT STAGE</b>	
ACAD-4480	(U) INDEPENDENT HOOK
<b>DM STAGE</b>	

ACAD-4580	(U) CH-53 DM/GTR II
ACAD-4581	(S) DM GAME PLANNING
ACAD-4582	(U) HELICOPTER PS AND EM
ACAD-4583	(S) ATTACK HELO THREAT TO ASSAULT SUPPORT
ACAD-4584	(S) FW THREAT TO ASSAULT SUPPORT
<b>CBRN STAGE</b>	
ACAD-4680	(U) CBRN
<b>FCLP STAGE</b>	
ACAD-4780	(U) INTRODUCTION TO BOAT OPERATION
<b>CQ STAGE</b>	
ACAD-4781	(U) SHIPBOARD OPERATIONS PLANNING
<b>TAC STAGE</b>	
ACAD-4990	(U) CH-53K AIRBORNE COMMAND AND CONTROL
ACAD-4991	(S) AIR ASSAULT OPERATIONS
ACAD-4992	(U) MAGTF TARGETING AND FIRE SUPPORT PLANNING
ACAD-4993	(U) JCAS

T&R CODE	ACADEMIC SYLLABUS
	MISSION PLUS SKILL PHASE (4000)
<b>RIE STAGE</b>	
ACAD-4991	(S) AIR ASSAULT OPERATIONS
ACAD-4992	(U) MAGTF TARGETING AND FIRE SUPPORT PLANNING
ACAD-4993	(U) JCAS
<b>ADGR STAGE</b>	
ACAD-4994	(U) ADGR
<b>SEA STAGE</b>	
ACAD-4780	(U) INTRODUCTION TO BOAT OPERATION
ACAD-4781	(U) SHIPBOARD OPERATIONS PLANNING

T&R CODE	ACADEMIC SYLLABUS
	INSTRUCTOR TRAINING PHASE (5000)
ACAD-5180	(U) INSTRUCTIONAL TECHNIQUES

T&R CODE	ACADEMIC SYLLABUS
	FLIGHT LEADERSHIP TRAINING PHASE (6000)
ACAD-6580	(U) AMC
ACAD-6012	(U) FUNCTIONAL CHECK FLIGHT READINGS
ACAD-6013	(U) FCP SEMINAR

T&R CODE	ACADEMIC SYLLABUS
	AVIATION CAREER PROGRESSION MODEL PHASE (8000)
<b>CORE SKILL PHASE</b>	
ACPM-8201	(U) MACCS AGENCIES, FUNCTIONS, AND CONTROL OF AIRCRAFT AND MISSILES
ACPM-8202	(U) TACTICAL AIR COMMAND CENTER (TACC)
ACPM-8203	(U) DIRECT AIR SUPPORT CENTER (DASC)
ACPM-8204	(U) TACTICAL AIR OPERATIONS CENTER (TAOC)
ACPM-8205	(U) MARINE AIR TRAFFIC CONTROL (MATC)
ACPM-8206	(U) LOW ALTITUDE AIR DEFENSE (LAAD)
ACPM-8208	(U) MARINE WING COMMUNICATION SQUADRON (MWCS)
ACPM-8221	(U) AVIATION OPERATIONS
ACPM-8222	(U) CONTROL OF AIRCRAFT AND MISSILES
ACPM-8223	(U) OFFENSIVE AIR SUPPORT (OAS)
ACPM-8224	(U) ASSAULT SUPPORT
ACPM-8225	(U) AIR RECONNAISSANCE
ACPM-8226	(U) ELECTRONIC WARFARE
ACPM-8227	(U) ANTI-AIR WARFARE
ACPM-8228	(U) AVIATION GROUND SUPPORT (AGS)

MISSION SKILL PHASE	
ACPM-8341	(U) SURFACE TO AIR MISSILES (SAM) THREAT
ACPM-8342	(U) FIXED WING THREAT
ACPM-8343	(U) ROTARY WING THREAT
ACPM-8361	(U) GROUND COMBAT OPERATIONS
ACPM-8362	(U) FIRE SUPPORT COORDINATION IN THE GCE
ACPM-8363	(U) MAGTF COMMAND AND CONTROL
ACPM-8364	(U) MAGTF COMMUNICATIONS
ACPM-8365	(U) PHASING CONTROL ASHORE
ACPM-8366	(U) INFORMATION MANAGEMENT
ACPM-8367	(U) UNMANNED AIRCRAFT SYSTEMS (UAS) SUPPORT TO THE MAGTF
SECTION LEAD SYLLABUS	
ACPM-8661	(U) COMMAND & CONTROL OF JOINT AIR OPERATIONS
ACPM-8662	(U) THEATER AIR GROUND SYSTEMS (TAGS)
ACPM-8663	(U) JOINT FIRE SUPPORT
ACPM-8664	(U) CLOSE AIR SUPPORT (CAS)
DIVISION LEAD SYLLABUS	
ACPM-8688	(U) COUNTERING AIR AND MISSILE THREATS
FLIGHT LEAD SYLLABUS	
ACPM-8685	(U) JOINT TARGETING
ACPM-8686	(U) NORTH ATLANTIC TREATY ORGANIZATION (NATO)
ACPM-8687	(U) JOINT AIRSPACE CONTROL

\* Denotes annual academic training requirements.

## 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 EATF is required for any initial event completed by a Basic/Transition or Refresher 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. All pilots will have an APR. The squadron training officer shall ensure each EATF is accounted for on the summary matrix in section 3 of the APR.

When operational commanders assign HMH 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, in the absence of a flight simulator, simulator events can be flown in the aircraft for T&R credit. For events requiring more than one CH-53K, a CH-53E may be used to fulfill the multiple aircraft requirement.

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, DM, 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.

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

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

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

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

2.5.5 **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
G	Event performed on the ground in a classroom, lab, TACC or other C3 node.
GE	Non-Flight event requiring evaluation
A/S	Event performed in aircraft preferred/simulator acceptable
S/A	Event performed in simulator preferred/aircraft acceptable
TEN	Tactical Environment Network
TEN +	Tactical Environment Network and at least one networked, man-in-the-loop simulator

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.

## 2.5.6 Event Terms

EVENT TERMS	
TERM	DESCRIPTION
<b>Discuss</b>	An explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge of procedures.
<b>Demonstrate</b>	The description and performance of a particular maneuver/event by the instructor, observed by the PUI/student. The PUI/student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver/student.
<b>Introduce</b>	The instructor may demonstrate a procedure or maneuver to a student, or may coach the PUI through the maneuver without demonstration. The PUI performs the procedures or maneuver with coaching as necessary. The PUI is responsible for knowledge of the procedures.
<b>Practice</b>	The performance of a maneuver or procedure by the PUI/student that may have been previously introduced in order to attain a specified level of performance.
<b>Review</b>	Demonstrated proficiency of a maneuver by the PUI/student.
<b>Evaluate</b>	Any flight designed to evaluate aircrew standardization that does not fit another category such as SARCK, HACCK, T2PCK, etc.

**2.5.7 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.

## 2.5.8 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.

**Prerequisites.** Events (academic or flight/simulator) that must be completed prior to the initiation of the event.

**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 CNAFINST, 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.

## 2.6 CORE INTRODUCTION PHASE

**Purpose.** To introduce the basic flight skills required in the CH-53K.

### General

**Academic/Ground Training.** The following Core Skill Introduction academic/ground training shall be complete IAW the POI requirements and prerequisites. Upon completion, the PUI shall report to the Student Control Officer or designated representative(s), who will then manually update the training code in MSHARP and log the academic/ground training event in section 2, FRS Aircrew Evaluation Forms of the APR, using the format listed in Enclosure 1 of this document.

Ground school is composed of ACAD, CBT, and LAB events. Basic, Transition, and Conversion students shall complete system CBT-0001 through CBT-0028, ACAD-0100 through ACAD-0131, and LAB-1001 through



LAB-1032 during Systems Ground School. Refresher and Modified Refresher students shall complete CBT-0001 through CBT-0028 before their first simulator event.

The CH-53K Model Manager has the responsibility to define the required content, conduct reviews, forward required changes and approve the content for his/her Ground School events, as applicable.

The CH-53K Model Manager has waiver authority over any event within Ground School for the respective syllabus.

Stages. The following stages are included in the Core Skill Introduction phase.

CORE INTRODUCTION PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.7.1	2-13
FAMILIARIZATION (FAM)	2.7.2	2-25
NIGHT FAMILIARIZATION (NFAM)	2.7.3	2-34
INSTRUMENT (INST)	2.7.4	2-35
NAVIGATION (NAV)	2.7.5	2-39
FORMATION (FORM)	2.7.6	2-41
CONFINED AREA LANDINGS (CAL)	2.7.7	2-43
EXTERNALS (EXT)	2.7.8	2-47
TERRAIN FLIGHT (TERF)	2.7.9	2-49
REVIEW (REV)	2.7.10	2-51
CORE INTRODUCTION PHASE CHECK (H2P)	2.7.11	2-51

## 2.7 CORE INTRODUCTION STAGES

### 2.7.1 Academics (ACAD)

**CBT-0001      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Introduction to the CH-53K**

Goal. The PUI has a basic understanding of the CH-53K historical data, publications, and general information about the interior and exterior of the aircraft.

Requirement. Complete all required CH-53K introductory modules.

**CBT-0002      2.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Power Plants**

Goal. The PUI has a basic understanding of the CH-53K T-408 engine and all associated sub-systems.

Requirement. Complete all required engine modules.

Prerequisite. CBT-0001

**CBT-0003      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Rotor System**

Goal. The PUI has a basic understanding of the CH-53K rotor system.

Requirement. Complete all required rotor system modules.

Prerequisite. CBT-0001

**CBT-0004      1.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Transmission System**

Goal. The PUI has basic understanding of the CH-53K transmission system.

Requirement. Complete all required transmission system modules.

Prerequisite. CBT-0001

<b>CBT-0005</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Fuel System**

Goal. The PUI has a basic understanding of the CH-53K fuel system.

Requirement. Complete all required fuel system modules.

Prerequisite. CBT-0001

<b>CBT-0006</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Secondary Power System**

Goal. The PUI a basic understanding of the CH-53K Secondary Power System.

Requirement. Complete all required secondary power system modules.

Prerequisite. CBT-0001

<b>CBT-0007</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Electrical System**

Goal. The PUI has a basic understanding of the CH-53K electrical system.

Requirement. Complete all required electrical system modules.

Prerequisite. CBT-0001

<b>CBT-0008</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Lighting System**

Goal. The PUI has a basic understanding of the lighting systems of the CH-53K.

Requirement. Complete all required lighting systems modules.

Prerequisite. CBT-0001

<b>CBT-0009</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Hydraulic Power System**

Goal. The PUI has a basic understanding of the CH-53K hydraulic power system.

Requirement. Complete all required hydraulic power system modules.

Prerequisite. CBT-0001

<b>CBT-0010</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Flight Control System (FCS)**

Goal. The PUI has a basic understanding of the CH-53K flight control system.

Requirement. Complete all required flight control system modules.

Prerequisite. CBT-0001

<b>CBT-0011</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Landing Gear System**

Goal. The PUI has a basic understanding of the CH-53K landing gear system.

Requirement. Complete all required landing gear system modules.

Prerequisite. CBT-0001

<b>CBT-0012</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Blade/Pylon Fold System**

Goal. The PUI has a basic understanding of the CH-53K blade/pylon fold system.

Requirement. Complete all required blade/pylon fold system modules.

Prerequisite. CBT-0001

**CBT-0013      1.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Avionics Management Systems**

Goal. The PUI has a basic understanding of the CH-53K avionics management system.

Requirement. Complete all required avionics management systems modules.

Prerequisite. CBT-0001

**CBT-0014      2.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Navigation System**

Goal. The PUI has a basic understanding of the CH-53K navigation system.

Requirement. Complete all required navigation system modules.

Prerequisite. CBT-0001

**CBT-0015      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Integrated Vehicle Health Management System**

Goal. The PUI has a basic understanding of the CH-53K integrated vehicle health management system.

Requirement. Complete all required integrated vehicle management system modules.

Prerequisite. CBT-0001

**CBT-0016      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Warnings, Cautions, and Advisories**

Goal. The PUI has a basic understanding of the CH-53K warning, caution, and advisory indications and their meanings.

Requirement. Complete all required warnings, cautions, and advisories modules.

Prerequisite. CBT-0001

**CBT-0017      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Aircraft Furnishings and Mission Systems**

Goal. The PUI has a basic understanding of various CH-53K aircraft furnishings and mission systems.

Requirement. Complete all required aircraft furnishings and mission systems modules to include the Cargo Handling System.

Prerequisite. CBT-0001

**CBT-0018      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Communication System**

Goal. The PUI has a basic understanding of the CH-53K communication system.

Requirement. Complete all required communications system modules.

Prerequisite. CBT-0001

**CBT-0019      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Fire Protection and Emergency Systems**

Goal. The PUI has completed the modules with a basic understanding of the various CH-53K emergency systems/subsystems.

Requirement. Complete all required emergency systems/subsystems modules.

Prerequisite. CBT-0001

<b>CBT-0020</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Aircraft Survivability Equipment (ASE)**

Goal. The PUI has a basic understanding of CH-53K aircraft survivability equipment (ASE).

Requirement. Complete all required aircraft survivability equipment modules.

Prerequisite. CBT-0001

<b>CBT-0021</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Aircraft Preflight Inspection**

Goal. The PUI has a basic understanding of the CH-53K aircraft preflight inspection requirements.

Requirement. Complete all required aircraft preflight modules.

Prerequisite. CBT-0001

<b>CBT-0022</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Weight and Power**

Goal. The PUI has a basic understanding of the CH-53K pre-flight and in-zone weight and power procedures.

Requirement. Complete all required weight and power modules.

Prerequisite. CBT-0001

<b>CBT-0023</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Aircraft Startup and Shutdown Checklists**

Goal. The PUI has a basic understanding of the CH-53K aircraft startup and shutdown procedures.

Requirement. Complete all required aircraft startup and shutdown modules.

Prerequisite. CBT-0001

<b>CBT-0024</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Introduction to Familiarization Flight Stage and Local Course Rules**

Goal. The PUI has a basic understanding of the CH-53K Familiarization Flight Stage and Local Course Rules.

Requirement. Complete all required familiarization stage and local course rules modules.

Prerequisite. CBT-0001

<b>CBT-0025</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Introduction to Formation Flight Stage**

Goal. The PUI has completed the modules with a basic understanding of formation flight.

Requirement. Complete all FORM stage training modules.

Performance Standard. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. CBT-0023

<b>CBT-0026</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
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**Introduction to the Confined Area Landing (CAL) Stage**

Goal. The PUI has completed the modules with a basic understanding of Confined Area Landings (CAL).

Requirement. Complete all CAL stage training modules.

Prerequisite. CBT-0023

**CBT-0027      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Introduction to the External Cargo Operations (Single/Dual Point) Stage**

Goal. The PUI has completed the modules with a basic understanding of single- and two-point external cargo operations.

Requirement. Complete all External cargo operations training modules.

Prerequisite. CBT-0023

**CBT-0028      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Introduction to the Terrain Flight Stage**

Goal. The PUI has completed the modules with a basic understanding of terrain flight.

Requirement. Complete all terrain flight stage training modules.

Prerequisite. CBT-0023

**ACAD-0100      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW/EML)**  
**Ground School Intro In-Brief**

Goal. The PUI understands the expectations during Ground School and has the requisite knowledge of the course and where all the necessary references can be accessed to complete the Core Skill Introduction Phase.

Requirement.

Discuss

Overall Course Design for Ground School  
The Core Skill Introduction Phase  
Welcome Aboard Package  
Class Schedule  
Systems reference material  
List, locate, and access to all appropriate references that will be required through the Core Skill Introduction Phase  
Expectations of PUI during Ground School to include work schedule, CBT preparation, and event prerequisites  
Squadron and MATSS processes, particularly scheduling

Demonstrate

Computer based training access  
Basic operation of CBTs

Prerequisite. CBT-0001

**ACAD-0101      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Introduction to the CH-53K**

Goal. The PUI has a basic understanding of the CH-53K historical data, publications, and general information about the interior and exterior of the aircraft.

Requirement. Complete all required CH-53K general aircraft information modules.

Prerequisite. CBT-0001

**ACAD-0102      2.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**  
**Power Plant**

Goal. The PUI has a basic understanding of the CH-53K T-408 engine and all associated sub-systems.

Requirement. Complete all required engine modules.

Prerequisite. CBT-0002

<b>ACAD-0103</b>	<b>1.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Rotor System</u></b>					

Goal. The PUI has a basic understanding of the CH-53K rotor system.

Requirement. Complete all required rotor system modules.

Prerequisite. CBT-0003

<b>ACAD-0104</b>	<b>1.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Transmission System</u></b>					

Goal. The PUI has basic understanding of the CH-53K transmission system.

Requirement. Complete all required transmission system modules.

Prerequisite. CBT-0004

<b>ACAD-0105</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Fuel System</u></b>					

Goal. The PUI has a basic understanding of the CH-53K fuel system.

Requirement. Complete all required fuel system modules.

Prerequisite. CBT-0005

<b>ACAD-0106</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Secondary Power System</u></b>					

Goal. The PUI a basic understanding of the CH-53K Secondary Power System.

Requirement. Complete all required secondary power system modules.

Prerequisite. CBT-0006

<b>ACAD-0107</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Electrical System</u></b>					

Goal. The PUI has a basic understanding of the CH-53K electrical system.

Requirement. Complete all required electrical system modules.

Prerequisite. CBT-0007

<b>ACAD-0108</b>	<b>0.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Lighting Systems</u></b>					

Goal. The PUI has a basic understanding of the lighting systems of the CH-53K.

Requirement. Complete all required lighting systems modules.

Prerequisite. CBT-0008

<b>ACAD-0109</b>	<b>1.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Hydraulic Power System</u></b>					

Goal. The PUI has a basic understanding of the CH-53K hydraulic power system.

Requirement. Complete all required hydraulic power system modules.

Prerequisite. CBT-0009

<b>ACAD-0110</b>	<b>3.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW)</b>
<b><u>Flight Control System (FCS)</u></b>					

Goal. The PUI has a basic understanding of the CH-53K flight control system.

Requirement. Complete all required flight control system modules.

Prerequisite. CBT-0010

**ACAD-0111      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Landing Gear System**

Goal. The PUI has a basic understanding of the CH-53K landing gear system.

Requirement. Complete all required landing gear system modules.

Prerequisite. CBT-0011

**ACAD-0112      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Blade/Pylon Fold System**

Goal. The PUI has a basic understanding of the CH-53K blade/pylon fold system.

Requirement. Complete all required blade/pylon fold system modules.

Prerequisite. CBT-0012

**ACAD-0113      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Avionics Management System**

Goal. The PUI has a basic understanding of the CH-53K avionics management system.

Requirement. Complete all required avionics management system modules.

Prerequisite. CBT-0013

**ACAD-0114      2.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Navigation System**

Goal. The PUI has a basic understanding of the CH-53K navigation system.

Requirement. Complete all required navigation system modules.

Prerequisite. CBT-0014

**ACAD-0115      1.0      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Integrated Vehicle Health Management System**

Goal. The PUI has a basic understanding of the CH-53K integrated vehicle health management system.

Requirement. Complete all required integrated vehicle management system modules.

Prerequisite. CBT-0015

**ACAD-0116      0.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Warnings, Cautions, and Advisories**

Goal. The PUI has a basic understanding of the CH-53K warning, caution, and advisory indications and their meanings.

Requirement. Complete all required warnings, cautions, and advisories modules.

Prerequisite. CBT-0016

**ACAD-0117      1.5      \*      B,R,MR,S,CIUT      G      CLSRM (ICW)**

**Aircraft Furnishings and Mission Systems**

Goal. The PUI has a basic understanding of various CH-53K aircraft furnishings and mission systems.

Requirement. Complete all required aircraft furnishings and mission systems modules.

Prerequisite. CBT-0017

**ACAD-0118    1.0    \*    B,R,MR,S,CIUT    G    CLSRM (ICW)**  
**Communication System**

Goal. The PUI has a basic understanding of the CH-53K communication system.

Requirement. Complete all required communication system modules.

Prerequisite. CBT-0018

**ACAD-0119    0.5    \*    B,R,MR,S,CIUT    G    CLSRM (ICW)**  
**Fire Protection and Emergency Systems**

Goal. The PUI has completed the modules with a basic understanding of the various CH-53K emergency systems/subsystems.

Requirement. Complete all required emergency systems/subsystems modules.

Prerequisite. CBT-0019

**ACAD-0120    1.0    \*    B,R,MR,S,CIUT    G    CLSRM (ICW)**  
**Aircraft Survivability Equipment (ASE)**

Goal. The PUI has a basic understanding of CH-53K aircraft survivability equipment (ASE).

Requirement. Complete all required aircraft survivability equipment modules.

Prerequisite. CBT-0020

**ACAD-0122    1.0    \*    B,R,MR,S,CIUT    G    CLSRM (ICW)**  
**Weight and Power**

Goal. The PUI has a basic understanding of the CH-53K pre-flight and in-zone weight and power procedures.

Requirement. Complete all required weight and power modules.

Prerequisite. CBT-0022

**ACAD-0123    2.0    \*    B,R,MR,S,CIUT    G    CLSRM (ICW)**  
**Aircraft Startup and Shutdown Checklists**

Goal. The PUI has a basic understanding of the CH-53K aircraft startup and shutdown procedures.

Requirement. Complete all required aircraft startup and shutdown modules.

Prerequisite. CBT-0023

**ACAD-0124    2.0    \*    B,R,MR,S,CIUT    G    CLSRM (ICW/EML)**  
**Introduction to Flight Stage and Local Course Rules**

Goal. The PUI has completed the modules with a basic understanding of the CH-53K Flight Stages and Complete Local Course Rules Exam.

Requirement. Complete all FAM stage training modules and the local course rules exam.

Prerequisite. CBT-0024, CBT-0025, CBT-0026, CBT-0027, CBT-0028

**ACAD-0130    4.0    \*    B,R,MR,S,CIUT    G    CLSRM (ICW/EML)**  
**Introduction to Joint Mission Planning System (JMPS)**

Goal. The PUI has completed the modules with a basic understanding of the Joint Mission Planning System and its integration with the CH-53K Flight Management System.

Requirement

Discuss

Route Editor

Drawing Editor



Threat Editor  
Imagery Data Manager  
Map Data Manager  
WEZOT  
Tactical Graphics Editor  
Intervisibility Tool  
SUMO Tool  
TaskView ATO and ACO Viewer  
Data Administration  
Framework Preferences  
Vehicle Preferences  
Keyboard Cards  
System Help

Prerequisite. ACAD-0124

<b>ACAD-0131</b>	<b>3.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW/EML)</b>
<b><u>JMPS VFR Route Planning</u></b>					

Goal. The PUI has completed the module with an advanced understanding of the Joint Mission Planning System UPC as it related to VFR Route Planning.

Requirement

Discuss

Importing Supplemental Data  
Importing Route Planning Data  
Local Points and 53K User ACPs  
Aircraft Configuration  
Create a CH-53K Route  
Use CH-53K Point Commands  
Create Patterns

Prerequisite. ACAD-0130

<b>ACAD-0132</b>	<b>3.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW/EML)</b>
<b><u>JMPS UPC Cargo Planning</u></b>					

Goal. The PUI has completed the module with an advanced understanding of the Joint Mission Planning System UPC as it relates to Cargo Planning.

Requirement

Discuss

Aircraft Configuration  
Weight Editors  
Passenger Loading  
Internal Cargo Loading  
External Cargo Loading  
Patient Loading  
Center of Gravity Calculations  
Cargo Plan Validation  
Fuel Planning  
Weight and Power

Prerequisite. ACAD-0131

<b>ACAD-0133</b>	<b>3.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW/EML)</b>
<b><u>JMPS UPC Additional Planning</u></b>					

Goal. The PUI has completed the module with an advanced understanding of the Joint Mission Planning System UPC as it relates to communications and map/mission management.

Requirement

Discuss

Creating and Editing VHF/UHF Presets  
Creating and Editing ARC-210 Scan Lists  
Annotating the Map  
Selecting Map Data  
Writing Map Data to Card  
Selecting Mission Data  
Validating Mission Data  
Writing Mission Data  
Printing CH-53K Kneeboard Cards  
Printing Weight and Power (Form F) Data

Prerequisite. ACAD-0132

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<b>ACAD-0134</b>	<b>3.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>CLSRM (ICW/EML)</b>
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**JMPS UPC IFR/RNAV Route Planning**

Goal. The PUI has completed the module with an advanced understanding of the Joint Mission Planning System UPC as it relates to IFR/RNAV route planning.

Requirement

Discuss

Area Navigation  
Planning Departures  
Planning Fix Points  
Planning Approaches  
Validating with the RNAV CC  
Validating Mission Data  
Writing Mission Data  
Printing Flight Plan Data

Prerequisite. ACAD-0130

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<b>LAB-1001</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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**Aircraft Systems I**

Goal. The PUI has a basic understanding of the CH-53K powerplants, rotors, transmission, fuel, and secondary power systems.

Requirement. Complete required Aircraft Systems I practical application lab.

Prerequisite. ACAD-0102, ACAD-0103, ACAD-0104, ACAD-0105, ACAD-0106

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<b>LAB-1002</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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**Aircraft Systems II**

Goal. The PUI has a basic understanding of the CH-53K electrical, lighting, and IVHMS systems.

Requirement. Complete required Aircraft Systems II practical application lab.

Prerequisite. ACAD-0107, ACAD-0108, ACAD-115

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<b>LAB-1003</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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**Aircraft Systems III**

Goal. The PUI has a basic understanding of the CH-53K hydraulic and flight control systems.

Requirement. Complete required Aircraft Systems III practical application lab.

Prerequisite. ACAD-0109, ACAD-0110

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<b>LAB-1004</b>	<b>1.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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### **Aircraft Systems IV**

Goal. The PUI has a basic understanding of the CH-53K landing gear and blade/pylon fold systems and the aircraft startup and shutdown checklists.

Requirement. Complete required Aircraft Systems IV practical application lab.

Prerequisite. ACAD-0111, ACAD-0112, ACAD-0123

<b>LAB-1013</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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### **Avionics Management System**

Goal. The PUI has a basic understanding of the CH-53K avionics management system.

Requirement. Complete required avionics management system practical application lab.

Prerequisite. ACAD-0113

<b>LAB-1014</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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### **Navigation System**

Goal. The PUI has a basic understanding of the CH-53K navigation system.

Requirement. Complete required navigation system practical application lab.

Prerequisite. ACAD-0114

<b>LAB-1017</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>LAB (TD)</b>
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### **Aircraft Furnishings and Mission Systems**

Goal. The PUI has a basic understanding of various CH-53K aircraft furnishings and mission systems.

Requirement. Complete required aircraft furnishings and mission systems lab on aircraft or suitable trainer.

Prerequisite. ACAD-0117

<b>LAB-1018</b>	<b>1.5</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>S</b>	<b>LAB (TD)</b>
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### **Communication System**

Goal. The PUI has a basic understanding of the CH-53K navigation system.

Requirement. Complete required navigation system practical application lab.

Prerequisite. ACAD-0118

<b>LAB-1021</b>	<b>5.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>1</b>	<b>CH-53K</b>
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### **Review Preflight Inspection I**

Goal. Practice preflight inspection procedures.

#### **Requirement**

##### **Instructor**

NI/ANI Designated Crew Chief (Crew Chief Instructor preferred)

##### **Discuss**

Screening aircraft discrepancies

Familiarity with CH-53K Mission Essential Subsystem Matrix (MESM)

Identifying recently completed maintenance actions

Component identification/nomenclature

Aircraft systems functionality

##### **Practice**

Exterior Inspection

Interior Inspection

Post Exterior Inspection

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisites. CBT-0021

External Syllabus Support. Static CH-53K

<b>LAB-1022</b>	<b>5.0</b>	<b>*</b>	<b>B,R,MR,CIUT</b>	<b>G</b>	<b>1</b>	<b>CH-53K</b>
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**Review Preflight Inspection II**

Goal. Practice preflight inspection procedures.

Requirement

Instructor

Instructor Pilot

Practice

Weight & Power review

Performance Chart review

Screening aircraft discrepancies

Familiarity with CH-53K Mission Essential Subsystem Matrix (MESM)

Identifying recently completed maintenance actions

Component identification/nomenclature

Aircraft systems functionality

Exterior Inspection

Interior Inspection

Post Exterior Inspection

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisites. LAB-1021

External Syllabus Support. Static CH-53K

<b>LAB-1030</b>	<b>4.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>LAB (TD)</b>
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**Introduction to Joint Mission Planning System (JMPS)**

Goal. The PUI has completed the modules with an advanced understanding of JMPS and its practical application with the CH-53K Flight Management System.

Requirement

Practice. Using instructor provided scenarios, perform all tasks from academic class

Prerequisites. ACAD-0130

<b>LAB-1031</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>LAB (TD)</b>
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**JMPS UPC VFR Route Planning**

Goal. The PUI has completed the modules with an advanced understanding of JMPS and its practical application with the CH-53K Flight Management System.

Requirement

Practice. Using instructor provided scenarios, perform all tasks from academic class

Prerequisites. LAB-1030

<b>LAB-1032</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S,CIUT</b>	<b>G</b>	<b>LAB (TD)</b>
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**JMPS UPC Cargo Planning**

Goal. The PUI has completed the modules with an advanced understanding of JMPS and its practical application with the CH-53K Flight Management System.

Requirement

Practice. Using instructor provided scenarios, perform all tasks from academic class

Prerequisites. LAB-1031

**LAB-1033      2.0      \*      B,R,MR,S,CIUT      G      LAB (TD)**  
**JMPS UPC Additional Planning**

Goal. The PUI has completed the modules with an advanced understanding of JMPS and its practical application with the CH-53K Flight Management System.

Requirement

Practice. Using instructor provided scenarios, perform all tasks from academic class

Prerequisites. LAB-1032

**LAB-1034      2.0      \*      B,R,MR,S,CIUT      G      LAB (TD)**  
**JMPS UPC IFR/RNAV CC Planning**

Goal. The PUI has completed the modules with an advanced understanding of JMPS and its practical application with the CH-53K Flight Management System.

Requirement

Practice. Using instructor provided scenarios, perform all tasks from academic class

Prerequisites. LAB-1030

2.7.2 Familiarization (FAM) (1100)

Purpose. To develop preliminary flight skills in the CH-53K and become familiar with aircraft characteristics, limitations, and emergency procedures; to develop proficiency in all maneuvers contained in the familiarization stage, and to develop proficiency to conduct safe operations during the day.

General. Discuss and become thoroughly familiar with all aspects of CRM applicable to familiarization stage maneuvers as described in the appropriate CH-53K NATOPS Flight Manual(s) and Maneuver Description Guide(s). All events should fly appropriate maneuvers in all flight modes.

FRSI required for FAM-1109-1118. NSFI/NSI required for SFAM-1200 and FAM-1201/1202. CSII authorized for all R and S events.

Crew Requirement. IP/RAC/CC. AO required for FAM-1201 and FAM-1202.

Ground Training. Pilots shall complete CBT-0024 (B only) and ACAD-0124.

**SFAM-1100      1.5      \*      B,R,MR,S      D      S      FTD**

**Introduction to Cockpit Procedures**

Goal. Introduce normal cockpit procedures, start procedures, and shutdown procedures.

Requirement

Introduce

- Pre-start checklist
- Post APU start checklist
- MFD(s) set up and management
- PFD set up and scan
- Operation of the ICS and radios
- Blade/pylon fold checklist
- Cargo ramp and door procedures
- Startup checklists
- Fuel management / Pressure refueling procedures
- Probe extension test
- Taxi checklist
- Monitoring of instruments
- Shutdown checklist

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. LAB-1001, LAB-1002, LAB-1003, LAB-1004, LAB-1013, LAB-1018, ACAD-0123

External Syllabus Support. FTD

<b>SFAM-1101</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>S</b>	<b>FTD</b>
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**Introduction to Ground Emergencies**

Goal. Introduce emergency ground procedures. Review startup/shutdown procedures.

Requirement

Introduce

- Abnormal Shutdown (No GOP, No APU)
- Emergency Shutdown
- APU Fire
- APU Malfunctions
- Engine Compartment Fire on the Ground
- Engine Starter Fail
- Hot Start

Practice

- Start/shutdown procedures
- Taxi checklist
- MFD Management
- Operation of the ICS and radios
- Fuel management

Performance Standards. Per CH-53K NATOPS

Prerequisites. SFAM-1100

External Syllabus Support. FTD

<b>SFAM-1102</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>S</b>	<b>FTD</b>
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**Introduction to Basic Airwork and Flight Control Modes**

Goal. Introduce normal ground and flight procedures. Review start/shutdown procedures.

Requirement

Introduce

- Ground taxi
- On deck control moding (GND, IGM)
- Low Speed control moding (Command, Hold, Beep)
- Vertical takeoff
- Hover/low speed work (PFCS, AFCS, PHLD/PHO)
- Height Hold modes
- Vertical landing
- Transition to forward flight
- High Speed control moding (Command, Hold, Beep)
- Forward flight work (PFCS, AFCS)
- High angle of bank maneuvering
- Cueing (tactile, aural, visual)
- eTAWS warnings
- Pre-landing checklist

Practice

- Start/shutdown procedures
- Taxi checklist
- MFD Management
- Operation of the ICS and radios
- Fuel management

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. SFAM-1101

External Syllabus Support. FTD

<b>SFAM-1103</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>S</b>	<b>FTD</b>
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**Introduction to Pattern Work and Normal Landing Procedures**

Goal. Introduce normal patterns and landing procedures (PFCS, AFCS. PHLD/PHO).

Requirement

Introduce

- Departures and approaches (PFCS, AFCS)
- Depart mode
- Decel-to Hover
- No hover takeoffs and landings
- Running takeoffs and landings
- Precision approach
- Crosswind landings
- Waveoffs (manual and with Depart)
- Landing gear system failure

Practice

- Hover/lowspeed work
- Vertical takeoff
- Transition to forward flight
- Pre-landing checklist
- Vertical landing
- Start/shutdown procedures

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. SFAM-1102

External Syllabus Support. FTD

<b>SFAM-1104</b>	<b>2.0</b>	<b>*</b>	<b>B,R,MR,S</b>	<b>D</b>	<b>S</b>	<b>FTD</b>
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**Introduction to Flight Emergencies I**

Goal. Introduce aircraft in-flight emergencies. Review normal ground and flight procedures.

Introduce

- Engine Fire
- Engine compressor stall
- Engine chip detector light
- Engine overspeed
- Engine power loss (Fixed Power, Power Limited, Rate Limited)
- Engine shutdown in flight
- Engine fuel and lubrication system malfunction
- OEI Training modes
- Single and/or dual engine failures
- Max gross weight running takeoff (actual and with Weight Bias)
- Max gross weight takeoff from a hover (actual and with Weight Bias)
- Pr>Pa (FADEC limiter/Power Limit Cueing)
- Fuel dump
- Triple engine failure
- Autorotative descent and maneuvering
- Autorotative landings

Practice

Start/shutdown procedures  
Vertical takeoff to a hover  
Transition to forward flight  
Normal approaches to a hover and normal vertical landing

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. SFAM-1103

External Syllabus Support. FTD

**SFAM-1105    2.0    \*    B,S    D    S    FTD**

**Introduction to Flight Emergencies II**

Goal. Introduce aircraft in-flight emergencies. Review normal ground and flight procedures.

Introduce

Flight Control system failures  
Degraded FCS modes (Passive, Direct, Jammed)  
WOW failures (Flight Mode Override, Ground Mode Override)  
Nose gearbox oil system failure  
Accessory module/rear gearbox failure  
Intermediate/Tail gearbox malfunctions  
Main gearbox failures  
Power train failures  
Tail rotor control malfunctions  
Hydraulic system malfunctions  
Electrical system malfunctions

Practice

Start/shutdown procedures  
Vertical takeoff to a hover  
Transition to forward flight  
Normal approaches to a hover  
Vertical landing

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. SFAM-1104

External Syllabus Support. FTD

**SFAM-1106    2.0    \*    B    D    S    FTD**

**Introduction to Crew Resource Management Skills**

Goal. The ability of the PUI to implement the seven principles of Crew Resource Management as dictated by aircraft material condition, aircrew actions, and a dynamic environment.

Requirement

Introduce

Principles of Crew Resource Management  
Obstacle takeoff  
Sender/receiver responsibilities and overcoming situational communication barriers  
ICS failures/malfunctions and radio failures/malfunctions  
Dynamic rollover  
Electrical fire  
Lightning strike  
Most conservative response rule, the two-challenge rule, and task saturation with compound emergencies

Practice

Previously introduced emergencies



Flight procedures  
Precision approach  
Running takeoff  
Running landing  
Approach to a hover  
Vertical landing  
No hover landing  
Autorotation  
Max gross weight running takeoff  
Max gross weight takeoff from a hover

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. SFAM-1105

External Syllabus Support. FTD

**SFAM-1107      2.0      \*      B,R,MR      D      S      FTD**  
**Simulator Progress Check**

Goal. For PUI to demonstrate a solid foundation of all previously introduced procedures.

Requirement

Review

All previously introduced checklists  
All FAM Maneuvers  
All emergency procedures

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. SFAM-1105

External Syllabus Support. FTD

**FAM-1108      1.0      \*      B      D      A      1 CH-53K**  
**Introduction to Ground Operations**

Goal. Introduce start, normal ground, and flight procedures including low work and normal approaches.

Requirement

Discuss

Communication systems and operation  
Fuel management  
Fuel dump system/procedures  
Fuel supply system and pressure refueling system

Introduce

Normal cockpit procedures  
Startup procedures  
Radio procedures  
Taxiing  
Shutdown procedures

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide.

Prerequisites. SFAM-1107

**FAM-1109      1.0      \*      B,S      D      A      1 CH-53K**  
**Introduction to Hover/Low Work**

Goal. Introduce hover/low work in all flight control modes.

Requirement

Discuss

- Engine start/ignition system
- Engine restart during flight
- Effects of Pilot Induced Oscillations (PIO)
- Exhaust gas re-ingestion
- Effects of high AOB maneuvering and subsequent aircraft response
- Hot start
- AOB limitations and cueing
- Emergency shutdown

Introduce

- Vertical takeoff/landing
- Hover techniques (PFCS, AFCS, PHLD/PHO)
- Square patterns/turns on the spot
- Air taxi
- Sideward/rearward flight

Practice

- Start procedures
- Normal ground procedures
- Shutdown procedures

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. FAM-1108

**FAM-1110      1.0      \*      B      D      A      1 CH-53K**

**Introduction to Forward Flight**

Goal. Introduce forward flight maneuvers in all flight control modes. Practice previously introduced FAM maneuvers.

Requirement

Discuss

- Engine system/limitations
- Engine compressor stall
- Engine chip detector light
- Engine overspeed
- Engine power loss
- Engine shutdown
- Engine fuel and lubrication system malfunction
- Single and/or dual engine compartment fires in-flight
- Three Simultaneous engine compartment fires in-flight
- FADEC Overheat
- Effects of gross weight on OEI performance
- Engine shutdown in flight
- Engine restart during flight

Introduce

- Transition to forward flight
- High Speed control moding (Command, Hold, Beep)
- Forward flight work (PFCS, AFCS)

Practice

- Cockpit procedures
- Hover/low work
- Vertical takeoff/landing
- Previously introduced FAM maneuvers

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. FAM-1109

**FAM-1111 1.5 \* B D A 1 CH-53K**

**Introduction to Pattern Work and Normal Takeoffs and Landings**

Goal. Introduce normal takeoffs, departures, patterns, approaches, and landings in all flight control modes. Practice previously introduced FAM maneuvers.

Requirement

Discuss

- OEI wave-off
- Fire detection/extinguishing system
- Engine compartment fire on the ground
- Engine compartment fires in flight
- APU fire
- Fuselage fire
- Engine post shutdown fire
- Electrical fire
- Smoke and fume elimination
- Hydraulic fire in main rotor pylon

Introduce

- No hover takeoffs/landings (PFCS, AFCS)
- Standard landing pattern
- Use of Depart Mode on departure and waveoff
- Decel-to-Hover approach
- Precision approach

Practice

- Previously introduced FAM maneuvers

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. FAM-1110

**FAM-1112 1.5 \* B,S D A 1 CH-53K**

**Introduction to OEI Training and Running Takeoffs and Landings**

Goal. Introduce OEI Training Mode and running takeoffs and landings. Practice previously introduced FAM maneuvers.

Requirement

Discuss:

- Pitch/Roll Inceptors (cyclic trim, station/mode deselect, Active Inceptor System (AIS) conflict/degradation)
- Yaw Inceptor
- Collective Inceptor (trim release, collective trim, attitude control, AIS conflict/degradation)
- Ground Operation Modes (intermediate/ground)
- In-Flight Modes
  - PFCS: Primary Flight Control System (Rate Command/Attitude Hold)
  - AFCS: Automatic Flight Control System (Attitude Command/Velocity Hold)
  - PHO: Position Hold Override (Velocity Command/Position Hold)
- Inertial Measuring Units
- Flight Control Computer Inputs
- Flight Control System Failures

Introduce

- OEI Training Mode (WT BIAS and OEI)
- Running takeoffs/landing

Simulated emergency procedures  
Practice  
Previously introduced FAM maneuvers

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. FAM-1111

**FAM-1113      1.5      \*      B,R,MR,S      D      A      1 CH-53K**  
**Introduction to High Angle of Bank Maneuvers and Practice Autorotations**

Goal. Introduce high AOB maneuvers and practice autorotations. Practice previously introduced FAM maneuvers and simulated emergency procedures.

Requirement

Discuss  
Ground resonance  
MFD Symbology  
Blade and pylon fold  
Tail-Rotor Control Malfunctions  
Blade monitoring system  
Bearing monitoring system  
  
Introduce  
High AOB maneuvers (PFCS, AFCS)  
Aircraft cueing (G-limit, power limit, blade stall)  
Autorotative descent and maneuvering  
Autorotations with power recovery  
  
Practice  
Previously introduced FAM maneuvers  
Simulated emergency procedures

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide.

Prerequisites. FAM-1112

**FAM-1114      2.0      \*      B      D      A      1 CH-53K**  
**Familiarization and Emergency Procedure Review I**

Goal. Practice all FAM maneuvers and simulated emergency procedures.

Requirement

Discuss  
Transmission system  
Pr>Pa  
Vortex ring state  
Nose gearbox oil system failure  
Accessory module/rear gearbox failure  
Intermediate/Tail gearbox malfunctions  
Main gearbox failures  
Power train failures  
  
Practice  
All FAM maneuvers  
Simulated emergency procedures

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. FAM-1113

**FAM-1115      2.0      \*      B,MR      D      A      1 CH-53K**  
**Familiarization and Emergency Procedure Review II**

Goal. Practice all FAM maneuvers and simulated emergency procedures.

Requirement

Discuss

Rotor brake system  
APU  
Hydraulic power supply systems  
Hydraulic system malfunctions  
Utility hydraulic subsystems  
Hydraulic Leak Detection and Isolation Logic

Practice

All FAM maneuvers  
Simulated emergency procedures

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. FAM-1114

**FAM-1116      2.0      \*      B,R,MR,S      D      A      1 CH-53K**  
**Familiarization and Emergency Procedure Review III**

Goal. Review all FAM maneuvers and simulated emergency procedures.

Requirement

Discuss

Ground cushion and ground effect  
Effect of wind on translational lift  
Effect of temperature and pressure altitude on power available  
Power required for flight at various airspeeds (hover to VNE)  
Effects of gross weight, altitude, temperature, turbulence, and wind on power required for hover both in and out of ground effect  
Effects of gross weight, altitude, temperature, and turbulence on blade stall  
Maximum speed level flight with turns for existing ambient conditions  
Pr>Pa  
Vortex Ring State  
Landing gear system  
    Weight on Wheels  
Landing gear system failure  
Integrated Vehicle Health Management System (IVHMS)

Practice

All FAM maneuvers  
Simulated emergency procedures

Performance Standards. IAW CH-53K NATOPS and Maneuver Description Guide

Prerequisites. FAM-1115

**FAM-1117      2.0      \*      B,R,MR,S      D      A      1 CH-53K**  
**Progress Pre-Check Review Flight**

Goal. Conduct Progress Pre-Check.

Requirement

Practice

All FAM maneuvers  
Simulated emergency procedures

Performance Standards. Demonstrate proficiency of FAM maneuvers IAW CH-53K NATOPS and FRS Maneuver Description Guide.

Prerequisites. FAM-1117

### 2.7.3 Night Familiarization (NFAM)

Purpose. To develop preliminary flight skills in the CH-53K and become familiar with aircraft characteristics, limitations, and emergency procedures; to develop proficiency in all maneuvers contained in the familiarization stage, and to develop proficiency to conduct safe operations during the night.

General. Pilots shall conduct Core Skill Introduction Night Systems (NS) phase flights under High Light Level (HLL) ambient conditions with an NS FAM Instructor (NSFI) or NS Instructor (NSI).

<b>SFAM-1200</b>	<b>2.0</b>	<b>*</b>	<b>B,S</b>	<b>HLL</b>	<b>S</b>	<b>FTD</b>
<b><u>Night Systems Adaptation</u></b>						

Goal. Introduce NS adaptation.

Requirement

Introduce

- NS set-up/operation
- Cockpit lighting
- Blind cockpit drills
- NS malfunctions
- NS goggle/degoggle procedures
- NS scan techniques
- NS hover/lowwork
- NS takeoff/departure/landing pattern/approach/landing (All FCS modes)
- Emergencies while wearing NS
- NS failure

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. The Night Imaging and Threat Evaluation (NITE) Lab syllabus. SFAM-1107.

External Syllabus Support. FTD

<b>FAM-1201</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>HLL</b>	<b>A</b>	<b>1 CH-53K</b>
<b><u>Introduction to Night Systems Low and Pattern Work</u></b>						

Goal. Introduce NS low work and pattern work.

Requirement

Discuss

- Aircraft lighting systems
- Electrical failures
- Electrical power supply system
- Generator fail
- DC Converter fail
- Minimum aircraft equipment required for night flight
- NS operations/failures
- Cockpit lighting
- Crew coordination
- Comfort level
- Low altitude emergencies
- Inadvertent IMC procedures
- Aircraft external lighting
- NS visual characteristics and limitations
- Scan techniques

Introduce

- Tip path plane awareness
- FLIR operation
- NS hover/low work

NS takeoff/departure/landing pattern/approach/landing (All FCS modes)

Performance Standards. Per CH-53K NATOPS, FRS Maneuver Description Guide, and MAWTS-1 NVD manual

Prerequisites. FAM-1117, SFAM-1200

**FAM-1202      1.5      \*      B,R,MR,S      HLL      A      1 CH-53K**  
**Practice Night Systems Low and Pattern Work**

Goal. Practice low work, takeoffs/landings and pattern work at unlit field while using NS.

Requirement

Discuss

Solar Lunar Almanac Program (SLAP)  
Effects of shadowing on NS operations  
Effects of atmospheric conditions on NS performance  
Blooming/de-gaining  
Approach pattern  
Spectrum viewed by NS (FLIR/NS)

Practice

FLIR operation  
NS hover/low work  
NS takeoff/departure/landing pattern/approach/landing (All FCS modes)

Performance Standards. Per CH-53K NATOPS, Maneuver Description Guide, and MAWTS-1 NVD manual.

Prerequisites. FAM-1201

2.7.4 Instruments (INST)

Purpose. To develop proficiency in instrument flight procedures while using all installed navigation aids.

General. All instrument stage flights should terminate with an instrument approach, when possible. All events should fly appropriate maneuvers in all flight modes.

FRSI required for INST-1306/1307. CSII authorized for all R and S events.

Crew Requirement. IP/RAC/CC (AO required for NS events).

**SINST-1300      2.0      \*      B,S      (N)      S      FTD**  
**Introduction To Basic Instruments**

Goal. Introduce basic instruments, unusual attitude recovery, and decision making IAW CRM techniques.

Requirement

Introduce

Flight Director modes for instrument flight  
Inertial Navigation System (INS) alignment procedures (manual and auto)  
Primary Flight Display (PFD)/Map Display/Flight Plan Display/Leg Data Display utilization  
Instrument cockpit setup  
Instrument takeoff (manual and Depart Mode)  
Flight maneuver options (manual/NAVAID only, AMS flightplan, Flight Director)  
Level speed change  
Standard rate timed turns  
Vertical S-1 pattern  
Oscar pattern  
Turn pattern  
Holding  
Unusual attitude recovery  
Decision making in the CH-53K IAW CRM techniques  
Troubleshooting strategies for degraded aircraft systems in IMC (ISIS use)

**Performance Standards.** IAW CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

**Prerequisites.** LAB-1014, SFAM-1107

External Syllabus Support. FTD

**SINST-1301      1.0      \*      B,R,S      (N)      S      FTD**  
**Radio Instruments I (TACAN/VOR)**

Goal. Introduce TACAN/VOR procedures and adaptability /flexibility per CRM techniques.

## Requirement

## Discuss

### Cockpit setup for TACAN/VOR use

Changes in mission from the briefing, crew-member incapacitation, and overcoming personality differences within the cockpit and cabin

Adaptability/flexibility in the CH-53K per CRM techniques

### Use/Failure of FCS functions in IMC conditions

## Introduce

### Point-to-point/Fix navigation

TACAN approach(s)

VOR approach(s)

Holding

## Practice

## Basic instruments

**Performance Standards.** Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

**Prerequisites.** INST-1300

External Syllabus Support. FTD

**SINST-1302      1.0      \*      B,R,S      (N)      S      FTD**  
**Radio Instruments II (ILS/Localizer)**

Goal. Introduce ILS/localizer approaches and mission analysis per CRM techniques. Practice aircraft emergency procedures.

### Requirement

## Discuss

### Cockpit setup for ILS/localizer use

Flight Director techniques for ILS/localizer use

## Introduce

## ILS and localizer approaches

## Localizer backcourse

## Practice

## TACAN and VOR approaches

### Previously introduced emergency procedures

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. INST-1301

External Syllabus Support. FTD



**SINST-1303 1.0 \* B,R,S (N) S FTD Radio**  
**Instruments III (GPS/RNP/RNAV)**

Goal. Introduce GPS approaches, Required Navigation Performance (RNP), Area Navigation (RNAV) and Flight Management System (FMS) operation.

Requirement

- Discuss
  - Cockpit setup for GPS approaches
  - RNP requirements and cockpit indications
- Introduce
  - GPS approaches
  - RNP and RNAV
  - FMS operation (create full IFR flight plan manually via AMS)
- Practice
  - ILS and localizer approaches
  - TACAN and VOR approaches
  - Previously introduced emergency procedures

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. INST-1302

External Syllabus Support. FTD

**SINST-1304 1.0 \* B (N) S FTD**  
**Radar Approaches and IMC Lost COMM Procedures**

Goal. Introduce NORDO procedures, ATC procedures in IMC conditions and leadership principles per CRM techniques.

Requirement

- Introduce
  - PAR and ASR approaches
  - Task fixation during an instrument approach with an emergency or degraded system
- Practice
  - Any previously introduced Instrument Approach
  - Inertial Navigation System (INS) alignment procedures
  - Primary Flight Display (PFD)/Map Display/Flight Plan Display/Leg Data Display utilization/management
  - Aircraft emergency procedures

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and FRS Maneuver Description Guide

Prerequisites. INST-1303

External Syllabus Support. FTD

**SINST-1305 2.0 \* B,R (N) S FTD Simulator**  
**Instrument Progress Check**

Goal. Evaluate the PUI's instrument knowledge and procedures prior to conducting the instrument flight stage.

Requirement

- Practice
  - FMS operation (create full IFR flight plan manually via AMS)
  - IFR departure
  - COMM/NAV failure under IMC

Crewmember relationships in the cockpit and cabin, and division of tasks  
All previously conducted instrument procedures  
Instrument Checklist

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. INST-1304

External Syllabus Support. FTD

**INST-1306      1.5      \*      B,R      (N)      A      1 CH-53K**

**Instrument Flight Review**

Goal. Review basic instrument, precision, and non-precision procedures.

Requirement

Discuss

Approach minimums and helicopter-only approaches  
Flight Director operation  
ILS/LOC and LOC back course approaches  
RNP/RNAV Procedures  
Cockpit setup  
Inadvertent entry into IMC conditions  
Lost plane procedures  
Lighting strike  
Emergency descent  
Use/Failure of FCS functions in IMC conditions

Introduce

Operation of the transponder modes  
VOR procedures  
TACAN procedures  
Point-to-point navigation (Direct To function)  
ILS/LOC procedures  
PAR procedures

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. FAM-1111, SINST-1305

**INST-1307      1.5      \*      B,R,MR,S      (N)      A      1 CH-53K**

**Instrument Progress Check**

Goal. Conduct IFR flight to an outlying airfield. Instrument progress check.

Requirement. Create an IFR Flight Plan with JMPS, if available, or directly via CDU if JMPS not available. Configure Mission Planning Environment (MPE) and Unique Planning Component (UPC) Data. Load Flight Plan Data to Portable Media, transfer to CH-53K Flight Management System and execute steps required for Flight Plan Activation/Manipulation. Plan, file, brief, and fly an IFR flight away from home field.

Discuss

Range performance charts in the CH-53K NATOPS Manual

Practice

Create full IFR flight plan in AMS (via JMPS or directly in CDU)  
Any previously introduced instrument procedure or approach

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. INST-1306

## 2.7.5 Navigation (NAV)

**Purpose.** To develop the ability to conduct day VFR navigation utilizing the navigation features of the Flight Management System. Additionally a basic understanding of the capabilities and limitations of the cargo compartment will be introduced in this stage of flight. All events should fly appropriate maneuvers in all flight modes.

FRSI required for NAV-1402. CSII authorized for all R and S events.

**Crew Requirement.** IP/RAC/CC

**SNAV-1400    2.0    \*    B,R,MR    D    S    FTD**

### **Introduction To VFR Navigation**

**Goal.** Introduce day VFR navigation utilizing the navigation features of the aircraft Flight Management System to arrive at an objective.

**Requirement.** The IP shall issue to the PUI the position of a departure point, an initial objective, and a secondary objective. The IP will additionally provide forecasted weather conditions for preflight planning considerations. PUI will prepare and generate all required mission documents and successfully transfer mission data to the appropriate portable media for use in the CH-53K Flight Management System.

#### Discuss

- Route planning considerations
- Pre-mission Planning
- Route Brief
- Communication skills and CRM
- Flying pilot and non-flying pilot duties

#### Introduce

- Moving Map Utilization
- Height Above Terrain (HAT) shading
- MFCU Digmap controls
- Approach to Point (ATPT) procedure
- Long Range Navigation and Fuel Management
- PALT Flight Director Mode

#### Practice

- Multifunctional Displays (MFD) Functionality: Primary Flight Display (PFD)/Map Display/Flight Plan Display/Leg Data Display
- Flight plan management and functions (ETA/TOT, OFFSET, DIRECT TO, BINGO FUEL, Fuel Summary)

### **Performance Standards.**

- Accurately conduct mission preflight planning utilizing JMPS and prepare all required products for the conduct of flight. Properly employ CH-53K FMS and be familiar with its functionality.
- Accurately conduct INS alignment and updates as required.

**Prerequisites.** LAB-1014, SFAM-1107

**External Syllabus Support.** FTD

**SNAV-1401    2.0    \*    B,R,S    D    S    FTD**

### **VFR Route and FLIR Navigation**

**Goal.** To review the PUI's ability to conduct VFR Navigation and introduce internal cargo management. PUI shall utilize the aircraft Flight Management System to navigate to various objectives while delivering simulated cargo loads.

**Requirement.** The IP shall issue to the PUI the departure point, a notional load plan and delivery destinations. The IP will additionally provide forecasted weather conditions for preflight

planning considerations. The PUI will ensure proper weight/power/CG calculations are conducted. The PUI will develop a flight route with JMPS and account for the internal cargo deliveries at each objective and generate all required mission documents and successfully transfer mission data to the appropriate portable media for use in the CH-53K Flight Management System.

Discuss

- Cargo loading procedures
- Weight/power/CG requirements and limitations
- Load management and considerations (MFD MSN Plan/Sim modes)
- FLIR Capabilities and Limitations
- MFCU FLIR controls
- In flight emergencies
- Communication skills and CRM
- Flying pilot and non-flying pilot duties
- Conduct of the flight

Introduce

- Create full tactical flightplan via AMS (passengers, internal cargo, external cargo, fuel onload/offload)
- Aircrew brief
- FLIR Operations

Practice

- Pre-mission Planning/ Route Brief
- Multifunctional Displays (MFD) Functionality: Primary Flight Display (PFD)/Map Display/Flight Plan Display/Leg Data Display
- Flight plan management and functions (ETA/TOT, OFFSET, DIRECT TO, BINGO FUEL, Fuel Summary)
- Flight Director functions

Performance Standards. Accurately conduct mission preflight planning utilizing JMPS and prepare all required products for the conduct of flight. Properly employ CH-53K FMS and be familiar with its functionality. Be familiar with the basic operation of the FLIR.

Prerequisites. SNAV-1400

External Syllabus Support. FTD

**NAV-1402      1.5      \*      B,S      D      A      1 CH-53K**  
**VFR Navigation Progress Check**

Goal. Introduce day VFR navigation supplemented by Forward Looking Infrared (FLIR) in the CH-53K. PUI shall utilize the aircraft Flight Management System and FLIR to arrive at an objective.

Requirement. The IP shall issue to the PUI the position of a departure point , an initial objective, and a secondary objective. Utilizing JMPS, the PUI will develop a flight route, identify hazards, and accentuate any applicable visual reference points. PUI will also prepare and generate all required mission documents and successfully transfer mission data to the appropriate portable media for use in the CH-53K Flight Management System.

Discuss

- Navigation to include GPS and FLIR checkpoint identification
- Fuel management
- In flight emergencies
- Communication skills and CRM
- Flying pilot and non-flying pilot duties
- Conduct of the flight

Practice

- Pre-mission Planning
- Flight Brief

Multifunctional Displays (MFD) Functionality: Primary Flight Display  
(PFD)/Map Display/Flight Plan Display/Leg Data Display  
Flight plan management and functions (ETA/TOT, OFFSET, DIRECT TO,  
BINGO FUEL, Fuel Summary)  
Flight Director functions  
PFD FLIR Mode

Performance Standards. Accurately conduct mission preflight planning utilizing JMPS and prepare all required products for conduct of flight. Properly employ CH-53K FMS, in particular the PDF FLIR Mode, and be familiar with its functionality. Be able to accurately conduct INS alignment and updates as required

Prerequisites. SFAM-1111, SNAV-1401

#### 2.7.6 Formation (FORM)

Purpose. To develop parade and cruise formation principles and techniques.

FRSI required for FORM-1501.NSFI/NSI required for SFORM-1502 and FORM-1503. CSII authorized for all R and SC events.

Crew Requirement. 1501: IP/RAC/CC. 1503: IP/RAC/CC/AO.

Ground Training. Pilots shall complete CBT-0025 (B only) and ACAD-0124.

**SFORM-1500 1.0 \* B D S FTD**

#### **Introduction to Day Formation Flight**

Goal. Introduce day formation principles.

Requirement.

Discuss:

- Visual Checkpoints
- Closure rate
- Cruise Turn Principles
- Crossovers
- Section Approaches
- IIMC
- CRM
- Comfort level

Introduce

- Section takeoffs
- Cruise principles
- Crossovers
- Section approaches

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CBT-0033 and SNAV-1401

External Syllabus Support. FTD

**FORM-1501 1.5 \* B,R,MR,S D A 2 CH-53K/E**

#### **Introduction to Parade, Cruise and Runway Section Landings**

Goal. Introduce parade, cruise formation and section landings. Practice visual and FMS navigation.

Requirement. The IP shall issue to the PUI the position of a departure point, an initial objective, and a secondary objective. Utilizing JMPS, the PUI will develop a flight route, identify hazards, and accentuate any applicable visual reference points. PUI will also prepare and generate all required mission documents and successfully transfer mission data to the appropriate portable media for use in the CH-53K Flight Management System.

Discuss

- Visual checkpoints for formation position
- Formation considerations
- Parade and Cruise formations
- Cruise turn principles
- Loss of visual contact
- Break-up and rendezvous
- Over-run procedures
- Navigation techniques
- Map preparation
- Checkpoint selection
- Boundaries/limiting features
- JMPS utilization
- FMS operation
- Situational awareness
- Communication skills and CRM

## Introduce

- Section takeoffs
- Parade position
- Crossovers
- Breakups
- Rendezvous
- Lead changes
- Section landings
- Cruise formations
- IIMC break-up

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. FAM-1111 and SFORM-1500

**SFORM-1502 1.0 \* B HLL S FTD**  
**Introduction to Night Systems Formation Flight**

Goal. Introduce night formation principles.

## Requirement

## Discuss

Aircraft lighting  
NVD Closure rate considerations  
CRM  
Comfort level

## Introduce

- Section takeoffs
- Cruise principles
- Crossovers
- NS section approaches

Performance Standards. Per CH-53K NATOPS, MAWTS-1 NVD Manual, and Maneuver Description Guide.

**Prerequisite.** SFAM-1200 and SFORM-1500

External Syllabus Support. FTD

FORM-1503	1.5	*	B <sub>2</sub> S	HLL	A	2 CH-53K/E
Night Systems Formation Flight						

Goal. Introduce NS formation procedures and section landings. Practice visual and FMS navigation.

**Requirement.** The PUI's will develop a flight route, identify hazards, and accentuate any applicable visual reference points. PUI's will also prepare and generate all required mission documents and successfully transfer mission data

to the appropriate portable media for use in the CH-53K Flight Management System. As lead, the PUI will navigate to a minimum of objectives.

Discuss

- Aircraft lighting
- Closure rate
- CRM and comfort level
- NS visual checkpoints for formation position
- Use of the FLIR
- Low level hazards
- Dead reckoning techniques
- Section navigation considerations

Introduce

- Night section takeoffs
- Cruise principles
- Crossover
- Lead changes
- Section landings

Performance Standards. Per CH-53K NATOPS, MAWTS-1 NVD Manual, and Maneuver Description Guide

Prerequisite. FAM-1202, FORM-1501, SFORM-1502

Range Requirements. Approved CAL/MAL site

## 2.7.7 Confined Area Landings (CAL) (1600)

Purpose. Develop takeoff and landing skills in confined areas.

FRSI required for CAL-1603-1605. NSF/NSI required for SCAL-1606/1607 and CAL-1608/1609. CSII authorized for all R and SC events.

Crew Requirement. 1603/1604: IP/RAC/CC. 1605/1608: IP/RAC/CC/AO.

Ground Training. Pilots shall complete CBT-0026 (B only) and ACAD-0124.

**SCAL-1600    1.0    \*    B,S                    D                    S                    FTD**

### **Introduction to Confined Area Landings**

Goal. Introduce precision approaches and introduce their application to CALs.

#### Requirement

Discuss

- Landing gear system/limitations
- Dynamic rollover
- Slope landing technique/limitations
- Loss of visual reference during landing (PFD Hover page symbology)
- Pr > Pa
- Main and tail rotor clearance factors over sloping or uneven terrain
- LZ considerations

Introduce

- Normal and precision approaches to confined areas (PFCS, AFCS)
- Obstacle approaches and departures
- ATPT and DTH use in confined area
- Use of hover page in DVE
- Scan pattern and techniques in DVE

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. SFAM-1107

External Syllabus Support. FTD

<b>SCAL-1601</b>	<b>1.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S</b>	<b>FTD</b>
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**Introduction to Section CALs**

Goal. Introduce section CAL approaches and landings.

Requirement

Discuss

- Hazards associated with section CAL landings
- CRM
- Section Waveoffs
- Use of coupled and manual modes among section
- Inter/intraplane communication

Introduce

- Day Section CAL approaches and landings
- Section Brief

Practice

- Normal and precision approaches to confined areas (PFCS, AFCS)
- Obstacle approaches and departures
- ATPT and DTH use in confined area
- Use of hover page in DVE
- Scan pattern and techniques in DVE

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. SFORM-1500, SCAL-1600

External Syllabus Support. (2) Linked FTD Preferred.

<b>CAL-1602</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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**Introduction to Confined Area Landings**

Goal. Introduce normal and precision approaches with their application to CALs.

Requirement

Discuss

- Use of flight control modes in CAL environment

Introduce

- Normal and precision approach to confined areas (PFCS, AFCS)
- Obstacle approach and departure
- Manual waveoff
- Scan, cockpit setup, aids and automation
- Cockpit duties, approach sequence and standard terminology
- Landing profiles

Review

- Landing gear system/limitations
- Dynamic rollover
- Slope landing technique/limitations
- Loss of visual reference during landing
- Vortex Ring State
- Pr > Pa
- Main and tail rotor clearance factors over sloping or uneven terrain
- LZ considerations

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. FAM-1111 and SCAL-1601

Range Requirements. Approved CAL/MAL site



**CAL-1603      1.5      \*      B,R,MR,S      D      A      1 CH-53K**

**Introduction to Coupled Approaches and Decel to Hover in a CAL Environment**

Goal. Introduce coupled approaches to confined area landings.

Requirement

- Introduce
  - Approach to point
  - Decel to hover
  - Use of hover page
  - Waveoff using Depart mode
- Practice
  - Manual waveoffs
  - Precision approaches to confined areas
- Review
  - Landing profiles
  - Map screen orientation
  - Scan, cockpit setup, aids and automation
  - Application of FLIR to CAL approaches

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. CAL-1602

Range Requirements. Approved CAL/MAL site

**CAL-1604      1.5      \*      B,R,MR      D      A      2 CH-53K/E**

**Introduction to Section CALs**

Goal. Practice section CAL approaches and landings in the CH-53K.

Requirement

- Review
  - Hazards associated with section CAL landings.
  - CRM
  - Section Waveoffs
  - Inter/intraplane communication
- Introduce
  - Section CAL landing patterns (all flight control modes)
  - Section brief

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. FORM-1501, SCAL-1603

Range Requirements. Approved CAL/MAL site

**SCAL-1605      1.0      \*      B,S      HLL      S      FTD**

**Introduction to Night System CALs**

Goal. Introduce NS confined area landings.

Requirement

- Discuss
  - Precision obstacle approaches
  - CRM/comfort level
  - Aircraft lighting
- Introduce
  - NS CAL landing patterns

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

**Prerequisite.** SFAM-1200 and SCAL-1600

External Syllabus Support. FTD

SCAL-1606	1.0	*	B	HLL	S	FTD
<u>Introduction to Night System SEC CALs</u>						

Goal. Introduce NS SEC confined area landings.

### Requirement

- Discuss
  - Hazards associated with NS section CAL landings
  - CRM
  - Section Waveoffs
- Introduce
  - NS SEC CAL landing patterns

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

**Prerequisite.** SFORM-1502, SCAL-1601, SCAL-1605

External Syllabus Support. (2) Linked FTDs Preferred

<b>CAL-1607</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>HLL</b>	<b>A</b>	<b>1 CH-53K</b>
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**Introduction to Night System CALs**

Goal. Introduce NS confined area landings.

### Requirement

- Discuss
  - Precision obstacle approach in a confined area
  - CRM/comfort level
  - Aircraft lighting
- Introduce
  - NS CAL landing patterns

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

**Prerequisite.** FAM-1202, SCAL-1603, SCAL-1605

Range Requirements. Approved CAL/MAL site

<b>CAL-1608</b>	<b>1.5</b>	<b>*</b>	<b>B,R</b>	<b>HLL</b>	<b>A</b>	<b>2 CH-53K/E</b>
<b>Introduction to Night System Section CALs</b>						

Goal. Practice NS section confined area landings.

### Requirement

Discuss	Hazards associated with NS section CAL landings
	CRM
	Section Waveoffs
Introduce	NS Section CAL landing patterns

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. FORM-1503, CAL-1604, SCAL-1606, CAL-1607

Range Requirements. Approved CAL/MAL site

## 2.7.8 External Loads (EXT)

Purpose. To develop skills necessary for external cargo operations.

NSFI/NSI required for EXT-1703/1704. CSII authorized for all R and SC events.

General. Prior to EXT-1700, refer to operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTTP series, MCRP 4-23E and Multi-Service Helicopter Sling Load Manual. Discuss and become familiar with all aspects of CRM applicable to external operations as described in the CH-53K NATOPS Flight Manual. All events should fly appropriate maneuvers in all flight modes.

Crew Requirement. IP/RAC/CC/AO.

Ground Training. Pilots shall complete CBT-0027 and ACAD-0124.

External Syllabus Support. Marine Common Aircrew Trainer (MCAT), Helicopter Support Team (HST), single and dual point external load(s) as required.

**SEXT-1700      2.0      \*      B,R,MR,S      D      S      FTD**

### **Introduction to Single & Dual Point Externals**

Goal. Introduce single point external cargo operations. Introduce communication skills between pilots and aircrew.

#### Requirement

Discuss

- CRM consideration for external operations
- Auto jettison
- JMPS considerations
- MFD MSN-LOAD page

Introduce

- Single & Dual point hook checks
- Performance calculations on MFD
- Weight and Power calculations in the zone (manual and via CDU Hover Override)
- External cargo weight and CG planning in flight via MFD
- Cargo pickup and release procedures (all flight control modes)
- Voice signals/standardized terminology
- Emergency Procedures during external operations

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. SCAL-1600

External Syllabus Support. FTD with linked MCAT

**EXT-1701      1.5      \*      B,S      D      A      1 CH-53K**

### **Introduce Single Point Externals**

Goal. Introduce single point external cargo operations.

#### Requirement

Discuss

- Airspeed considerations with external loads
- Weight and power calculations
- Power available/required considerations
- Pr>Pa
- Nr requirements
- Single point suspension system/operations
- Cargo pickup and delivery procedures
- Cargo release methods
- Cargo jettison procedures
- Hook open advisory light in flight

- MFD MSN-LOAD page
- Introduce
  - Single point load pickup and release procedures
  - Normal pattern with external load
  - CRM
  - Voice signals/standardized terminology

Performance Standards. Perform five hookups and releases using PFCS or AFCS as is best for PIUT performance, or until proficiency is demonstrated per CH-53K NATOPS, MCRP 4-23 and Multi-Service Helicopter Sling Load Manual, and Maneuver Description Guide.

Prerequisite. CAL-1603 and SEXT-1700

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and single point load, dual point load acceptable for R and S.

**EXT-1702      1.5      \*      B,R,MR      D      A      1 CH-53K**

**Introduce Dual Point Externals**

Goal. Introduce dual point external cargo operations.

Requirement

- Discuss
  - Dual point suspension system operations/limitations
  - CRM
  - Emergency Procedures during external operations
  - Forward/Aft hook open advisory light in flight
  - Pilot induced/assisted oscillations
  - Cargo jettison
  - MFD MSN-LOAD page
  - AUTO JETT FAIL
- Introduce
  - Dual point load pickup and release procedures
- Practice
  - Normal pattern with external load
  - CRM
  - Voice signals/standardized terminology

Performance Standards. Perform 5 hookups and releases using PFCS or AFCS as is best for PIUT performance, or until proficiency is demonstrated per CH-53K NATOPS, MCRP 4-23 and Multi-Service Helicopter Sling Load Manual, and FRS Maneuver Description Guide.

Prerequisite. CAL-1603 and SEXT-1700

Range Requirements. CAL/MAL site

External Syllabus Support. HST and dual point load

**EXT-1703      1.5      \*      B      HLL      A      1 CH-53K**

**Introduce Night System Single Point Externals**

Goal. Introduce single point external cargo operations utilizing NS.

Requirement

- Discuss
  - CRM
  - Comfort level
  - NS scan techniques
  - Aircraft emergencies

Cargo jettison procedures  
Power requirements  
Aircraft lighting  
Landing zone markings  
Introduce  
Single point external cargo pickup and delivery utilizing NS

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. CAL-1607 and EXT-1701

Range Requirements. CAL/MAL site

External Syllabus Support. HST and single point load

**EXT-1704      1.5      \*      B,R,S      HLL      A      1 CH-53K**

**Introduce Night System Dual Point Externals**

Goal. Introduce dual point procedures utilizing NS.

Requirement

Discuss  
NS considerations  
CRM  
Comfort level  
Scan techniques  
Aircraft emergencies  
Cargo jettison procedures  
Aircraft lighting  
Landing zone markings  
Introduce  
Dual point external cargo pickup and release procedures utilizing NS

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. CAL-1607 and EXT-1702

Range Requirements. CAL/MAL site

External Syllabus Support. HST and dual point load, single point load acceptable for R and S.

**2.7.9      Terrain Flight (TERF)**

Purpose. To introduce skills necessary to perform TERF maneuvers safely. Emphasize the importance of crew coordination, comfort level, and standard terminology.

General. T&R Program Manual requires a designated TERF instructor for all initial TERF flights. ANTP 3-22.3-CH53 Tactical Employment contains all maneuver descriptions, and CBT-0036 explains all maneuvers. T&R Program Manual establishes all currency requirements/TERF altitude limitations. The RAC shall complete academic training prior to commencing the TERF flight syllabus. All events should fly appropriate maneuvers in all flight modes.

FRSI required for TERF-1801. CSII authorized for all R and S events.

Crew Requirement. IP/RAC/CC/AO.

Ground Training. Pilots shall complete CBT-0028 (B only) and ACAD-0124.

**STERF-1800      1.0      \*      B      D      S      FTD**

**Introduce Terrain Flight**

Goal. Introduce TERF maneuvers and demonstrate TERF navigation.

Requirement

Discuss

TERF maneuvers  
CRM  
Comfort level  
Reduced reaction time  
Emergency procedures at low altitudes  
Climb-to-cope  
Standardized terminology  
Common mistakes  
Hazard maps  
Currency requirements  
Blade walk-around

Introduce

High AOB maneuvering in PFCS and AFCS  
Masking and unmasking  
TERF turns  
Rolls  
Bunts  
Quick stops  
Low level/contour profiles  
Using a 1:50,000 scale map, demonstrate TERF navigation

Performance Standards. Per CH-53KJNATOPS, ANTTP 3-22.3-CH53, and Maneuver Description Guide.

Prerequisites. SFAM-1107

Range Requirements. FTD with linked MCAT

<b>TERF-1801</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce TERF navigation. Practice TERF maneuvers.

Requirement

Discuss

TERF maneuvers  
CRM  
Comfort level  
Reduced reaction time  
Emergency procedures at low altitudes  
Climb-to-cope  
Standardized terminology  
Common mistakes  
Hazard maps  
Currency requirements  
Blade walk-around  
Common terms  
Obstacle clearance  
Low altitude emergencies  
AOB limits and principles  
Aircrew responsibilities

Introduce

Masking and unmasking  
TERF turns  
Rolls  
Bunts  
Quick stops  
Low level/contour profiles  
Using a 1:50,000 scale map, demonstrate TERF navigation

Performance Standards. Per CH-53K NATOPS, ANTTP 3-22.3-CH53, ANTTP 3-22.5 Tactical Pocket Guide and Maneuver Description Guide.

Range Requirements. TERF maneuver area/route

Prerequisite. FAM-1111 and STERF-1800

#### 2.7.10 Review (REV)

Purpose. To demonstrate proficiency in performing duties as a core introduction phase complete copilot per CH-53K NATOPS and appropriate pubs.

Crew Requirement. IP/RAC/CC

CSII authorized for all R and S events.

Ground Training. RACs should complete CH-53K NATOPS open and closed book examination prior to the flight.

<b>SREV-1900</b>	<b>2.0</b>	<b>*</b>	<b>B,R,S</b>	<b>D</b>	<b>S</b>	<b>FTD</b>	<b>Review</b>
<b><u>Core Skills</u></b>							

Goal. Review Core Introduction Phase training.

#### Requirement

##### Practice

- All FAM stage maneuvers
- Instrument stage maneuvers
- Confined area landings
- External operations
- All emergency procedures
- If possible, formation flight

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide. PUI is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. Completion of all previous stages

External Syllabus Support. FTD

#### 2.7.11 Core Introduction Phase Check

Purpose. To demonstrate proficiency in performing the duties as a Core Introduction Phase complete copilot per CH-53 NATOPS and appropriate pubs.

General. The RAC is responsible for all maneuvers and emergency procedures in the Core Introduction Phase.

Crew Requirement. IP/RAC/CC. A CH-53 NATOPS qualified instructor shall evaluate this flight.

Ground Training. Per the CH-53 NATOPS Flight Manual and CNAFINST 3710.7, all RACs shall successfully complete an open and closed book NATOPS test and systems test prior to H2P. Upon completion of this flight, the RAC will be CH-53 NATOPS qualified in model as a Helicopter 2nd Pilot (H2P).

<b>H2P-1902</b>	<b>1.5</b>	<b>*</b>	<b>B,R,M,R,S</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
<b><u>Review Core Skills</u></b>						

Goal. Evaluate systems knowledge of the CH-53K and the capability to perform maneuvers in the Core Skill Introduction phase, including high AOB maneuvers.

#### Requirement

##### Practice

- Systems and mission systems knowledge of the CH-53
- Brief and demonstrate proficiency of all aircraft emergency procedures per the CH-53K NATOPS flight manual

Demonstrate proficiency and capability to perform Core Skill Introduction maneuvers, to include takeoffs, approaches, instrument procedures, emergency procedures, CALs, high AOB maneuvers, and landings

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. SREV-1900 and NATOPS-6000-6002

Range Requirements. Approved CAL/MAL site

## 2.8 CORE PHASE

Purpose. To introduce and develop proficiency in the execution of Core Phase skills required as a pilot within a Marine Heavy Helicopter Squadron (HMH). The Core Phase represents the basic skill sets required to conduct Mission Phase events. These basic functions serve as tactical enablers that allow crews to progress to the more complex Mission Phase. This phase encompasses a combination of academic and flight events to train the individual pilot to the level required to conduct assigned Mission Tasks.

General. The following events within this phase requires a Basic Instructor Pilot (BIP) for all initial or refresher flights:

FAM-2100, 2101, 2102, 2103, 2104  
FORM-2110, 2115  
CAL-2200, 2201, 2210, 2211  
EXT-2400-2402, 2410, 2411  
AG-2810  
TAC-2910, 2911

All initial and refresher 2000-6000 Phase simulated events require a uniformed IP with appropriate designations. Any subsequent simulated event attempts at that event may be done single piloted. Any initial or refresher single aircraft training event may be flown in a section as the lead aircraft position.

Each phase throughout the core skills syllabus should attempt to utilize all available flight control modes to the maximum extent practicable.

Stages. The following stages are included in the Core Phase.

CORE PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
FAMILIARIZATION (FAM)	2.9.1	2-53
FORMATION (FORM)	2.9.2	2-56
CONFINED AREA LANDINGS (CAL)	2.9.3	2-57
TERRAIN FLIGHT (TERF)	2.9.4	2-60
EXTERNALS (EXT)	2.9.5	2-62
GROUND THREAT REACTION (GTR)	2.9.6	2-66
HELICOPTER AIR TO AIR REFUELING (HAAR)	2.9.7	2-70
AERIAL GUNNERY (AG)	2.9.8	2-72
TACTICS (TAC)	2.9.9	2-73
HIGH LIGHT LEVEL (HLL)	2.9.10	2-76
LOW LIGHT LEVEL (LLL)	2.9.11	2-81

### Ground/Academic Training

Purpose. Within the Core Phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

The Core Phase academic/ground training shall be complete IAW the POI requirements and prerequisites and IAW paragraph 2.8 of this manual. Upon completion, the PUI shall report to the PTO or designated representative(s), who will then manually update the training code in MSHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

NIPR 2000-6000 classes will be located at the MAWTS-1 NIPR website under ASD, CH-53K, T&R:

<https://mceits.usmc.mil/sites/mawts1/default.aspx>



SIPR 2000-6000 classes will be located at the MAWTS-1 SIPR website under ASD, CH-53K, T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1>

**Prerequisites.** The following events/designations are prerequisites prior to the commencement of the Core Phase.

Academic: See event

Flight: H2P-1902

Designation/Qualification: H2P

## 2.9 CORE STAGES

### 2.9.1 Familiarization/Instruments (FAM/INST)

Purpose. To review familiarization, formation, navigation and instrument procedures in the daytime environment.

General. Pilots will find familiarization, formations and maneuver descriptions in the NATOPS, Maneuver Description Guide and ANTTP 3-22.3 CH-53.

The NATOPS Instrument Flight Manual defines basic instrument procedures. All instrument stage flights should terminate with an instrument approach when possible.

BIP required for all initial or refresher flights.

Crew Requirement. FAM/INST/EP-2100: P/P. AIRCRAFT MGMT / NAV SYSTEMS-2101: P/P. FLIGHT CNTRL MODES-2102: P/P. FAM/INST-2103: P/P/CC FLIGHT CNTRL MODES-2104: P/P/CC.

**Academic Training.** The MAWTS-1 CH-53 Course Catalog contains the required readings, chalk talks, and lectures which shall be completed IAW the FAM/FORM/INST event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the familiarization/formation/instrument stage:

Academic: ACAD-2180-2185

Flight: H2P-1902

Designation/Qualification: H2P

<b>ACAD-2180</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K GPS tactical route planning academic requirements.

Requirement. Complete all required tactical route planning training modules.

**Performance Standard.** Per current evaluation criteria for route planning

<b>ACAD-2181</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K Multifunction Display (MFD) academic requirements.

**Requirement.** Complete all required MFD training modules.

Performance Standard. Per current evaluation criteria for MFD training.

<b>ACAD-2182</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K ARC-210 HAVEQUICK/SINGARS academic requirements.

Requirement. Complete all ARC-210 HAVEQUICK/SINGARS training modules.

**Performance Standard.** Per current evaluation criteria for ARC-210 HAVEQUICK/SINGARS training.

ACAD-2183	1.0	365	B,R,S,M	G
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Goal. Completion of CH-53K JMPS Cargo Planning Tool/Internal Cargo academic requirements.

Requirement. Complete all JMPS Cargo Planning Tool/Internal Cargo training modules.

**Performance Standard.** Per current evaluation criteria for JMPS Cargo Planning Tool/Internal Cargo training.

<b>ACAD-2184</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K FLIR academic requirements.

**Requirement.** Complete all FLIR training modules.

Performance Standard. Per current evaluation criteria for CH-53K FLIR training.

**ACAD-2185 1.0 365 B.R.M G**

Goal. Completion of AN/AVS-7 CH-53K ANVIS HUD academic requirements.

Requirement. Complete all AN/AVS-7 CH-53K ANVIS HUD training modules.

**Performance Standard.** Per current evaluation criteria for AN/AVS-7 CH-53K ANVIS HUD training.

<b>SFAM-2100</b>	<b>2.0</b>	<b>90</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>S/A</b>	<b>1</b>	<b>CFTD/CH-53K</b>
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Goal. Review normal, emergency, and instrument procedures. This event fulfills the NAVMC 3500.14 Aviation T&R Program manual Chapter 2 NATOPS quarterly emergency procedure event.

## Requirement

Discuss:

- Basic FAM maneuvers
- Emergency procedures
- Operating limitations
- Basic instrument procedures
- Precision and non-precision approaches
- If flown at night, discuss night lighting and use, night scan, and fixation
- One engine inoperative training mode
- Simulated heavy/light gross weight operations

Review:

- Basic FAM maneuvers
- Emergency procedures
- Operating limitations
- Basic instrument procedures
- Precision and non-precision approaches
- Flight director navigation and approaches
- One engine inoperative training mode
- Simulated heavy/light gross weight operations

Performance Standards. Per CH-53K NATOPS, Maneuver Description Guide, and Instrument Flight Manual.

Instructor. BIP required for initial flights or refreshers

**Prerequisites.** H2P-1902

External Syllabus Support. CFTD

<b>SFAM-2101</b>	<b>2.0</b>	<b>365</b>	<b>B,R</b>	<b>(N)</b>	<b>S/A</b>	<b>1</b>	<b>CFTD/CH-53K</b>
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**Goal.** Introduce and develop proficiency in the Aircraft Management and Navigation Systems.

### Requirement

Discuss:

Same as FAM/INST-2100  
CRM utilizing MFDs  
MFCU/MFD FLIR Operation  
MFCU/MFD Navigation Pages Operation

Introduce:

MFCU/MFD Operations in all phases of flight

Review:

Same as FAM/INST-2100  
Low work  
Pattern work CAL/MAL  
Creating route in JMPS  
Loading route in AMS  
Manipulate routes while in flight  
Moving map  
Flight director navigation and approaches  
Approach to point/hover  
Hover display

Performance Standards. Same as FAM/INST-2100

Instructor. BIP required for initial flights or refreshers

Prerequisite. ACAD 2180-2185, SFAM-2100

Range Requirements. Approved CAL/MAL site

External Syllabus Support. CFTD

<b>SFAM-2102</b>	<b>2.0</b>	<b>*</b>	<b>B,R,S</b>	<b>(N)</b>	<b>S/A</b>	<b>1</b>	<b>CFTD/CH-53K</b>
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Goal. Gain proficiency in the Flight Control Modes while operating in the local working area.

Requirement

Discuss:

Basic FAM maneuvers  
Emergency procedures  
Operating limitations  
Flight Control Modes  
PFCS  
AFCS  
Depart/Decel to hover/position hold  
Local course rules

Review:

Basic FAM maneuvers  
Local course rules  
Emergency procedures  
Operating limitations  
Basic instrument procedures  
Precision and non-precision approaches

Performance Standards. Per CH-53K NATOPS, Standardization and Instrument Flight Manual.

Prerequisites. SFAM-2101

External Syllabus Support. CFTD

<b>FAM-2103</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Review normal, emergency, and instrument procedures.

Requirements

Discuss:

Same as FAM/INST-2100

Review:

Same as FAM/INST-2100

Performance Standards. Same as FAM/INST-2100

Prerequisites. SFAM-2102

**FAM-2104      1.5      365      B,R,M      A      1      CH-53K**

Goal. Review Flight Control Modes.

Requirements

Discuss:

Same as FAM/INST-2102

Review:

Same as FAM/INST-2102

Performance Standards. Same as FAM/INST-2102

Prerequisites. FAM-2103

## 2.9.2 Formation Stage (FORM)

Purpose. To review formation, and navigation procedures in the daytime environment.

General. Pilots will find familiarization, formations and maneuver descriptions in the NATOPS, Maneuver Description Guide and ANTP 3-22.3 CH-53.

Crew Requirement. FORM-2110: P/P. FORM-2115: P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, chalk talks, and lectures which shall be completed IAW the FAM event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the familiarization/formation/instrument stage:

Academic: ACAD-2186

Flight: 2102

Designation/Qualification: H2P

**ACAD-2186      1.0      \*      B      G**

Goal. Completion of CH-53K TACFORM academic requirements.

Requirement. Complete all CH-53K TACFORM training modules.

Performance Standard. Per current evaluation criteria for CH-53K TACFORM training.

**SFORM-2110      2.0      \*      B      D      S      CFTD**

Goal. Conduct day formation and introduce tactical formation maneuvering.

Requirements

Discuss:

CRM

Comfort level

Closure rates

Formation maneuvers; Break turns, center turns, pinch/dig, cover, tac turns, in-place turns, split turns, and cross turns

Combat spread, combat cruise, and parade positions

Cruise Turn principles

Recovery from unusual attitudes

Loss of visual contact

Lost communications

Inadvertent IMC procedures

High density altitude

High AOB turns/aerodynamics performance

Inter- and intra-aircraft communications

Lead changes; include EMCON lead change  
CFTD recording for training purposes

Introduce:

Inadvertent IMC breakup and rendezvous  
Break turns, center turns, pinch/dig, cover, tac turns, in-place turns, split turns, and cross turns  
Combat spread and combat cruise formations  
CFTD recording for training purposes

Review:

Parade position  
Cruise principles  
Crossovers  
Full COMM and no COMM lead changes

Performance Standards

Successfully execute all TACFORM maneuvers as lead and wingman IAW ANTTP 3-22.3-CH53.  
Successfully execute inadvertent IMC breakup and rendezvous IAW ASTACSOP.

Prerequisite. ACAD-2186, SFAM-2102

Instructor. BIP required for initial flights or refreshers

External Syllabus Support. (2) Linked CFTDs. In the event that linked CFTDs are not available, this event can be conducted in a single CFTD with a simulated aircraft as lead.

**FORM-2115    1.5    180    B,R,S,M    (NS)    A    2    CH-53K**

Goal. Conduct day formation and introduce tactical formation maneuvering.

Requirements

Discuss:

Same as SFORM-2110

Review:

Same as SFORM-2110

Performance Standards. Same as SFORM-2110

Instructor. BIP required for initial flights or refreshers. NSI is required if not NS qualified in light level event is conducted.

Prerequisites. FAM-2104, SFORM-2110

2.9.3 Confined/Mountainous Area Landings (CAL/MAL)

Purpose. To conduct takeoffs and landings in confined/mountainous areas in the daytime environment.

General. Pilots may find a description of these maneuvers in the CH-53K NATOPS, Maneuver Description Guide and ANTTP 3-22.3-CH53. Events should be flown using all flight control modes.

Crew Requirement. SMAL-2200: P/P. SRVL-2201: P/P. CAL-2210-2111: P/P/CC. BIP required for all initial or refresher flights.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the event descriptions in the Confined/Mountainous Area Landing stage.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Confined/Mountainous Area Landing stage:

Academic: ACAD-2280-2282

Flight: FAM-2104

Designation/Qualification: H2P

**ACAD-2280    1.0    365    B,R,M    G**

Goal. Completion of CH-53K desert operations academic requirements.

Requirement. Complete all CH-53K desert operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K desert operations training.

<b>ACAD-2281</b>	<b>1.0</b>	<b>365</b>	<b>B,R,M</b>	<b>G</b>
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Goal. Completion of CH-53K mountain operations academic requirements.

Requirement. Complete all CH-53K mountain operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K mountain operations training.

<b>ACAD-2282</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K techniques for Reduced Visibility Landings (RVL) operations academic requirements.

**Requirement.** Complete all CH-53K RVL operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K RVL operations training.

<b>SMAL-2200</b>	<b>1.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S/A</b>	<b>1</b>	<b>CFTD/CH-53K</b>
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Goal. Introduce CALs in mountainous terrain in day conditions.

**Requirements.** Conduct weight and power calculations, execute normal operations, takeoffs and landings to a simulated high density altitude landing environment (6000-10,000' DA).

Discuss:

- High altitude physiology emergencies.
- Wind and weather effects.
- Orographic turbulence.
- Wind Shear.
- High altitude operations.
- Power available vs power required.
- High DA/Gross Weight arrivals and landings.
- High altitude emergency procedures
- Aircraft handling qualities (turn radius, Phase lag, rate of climb).
- Use of parking brake.
- Sloped landings.
- IIMC procedures in mountainous terrain
- Tail rotor authority/effectiveness at high altitudes.
- Flight control and power cueing

Introduce:

- Mountainous area operations.
- Pinnacle landings.
- Slope landings.
- Confined area landings.
- Landings and operations in valleys and canyons.
- Crosswind landings
- CRM
- Dynamic rollover
- Crosswind approaches
- Limitations on landing on unprepared and uneven surfaces
- Vortex Ring State
- Pr>Pa
- Low altitude emergencies
- Wave-off / departure procedures
- MFD
- Engine emergencies

- Obstacle clearance
- High gross weight takeoffs/landings
- Maneuvering at high gross weight/density altitude (GW/DA)
- High AOB turns/aerodynamic performance
- FLIR capabilities and limitations
- LZ Diagram briefing and planning considerations

Review:

- Normal approaches
- Precision approaches
- Hover and no hover landings
- Low altitude emergencies

Performance Standards:

- Demonstrate knowledge of proper MAL procedures IAW the NTTP and NATOPS.
- Execute up-slope/down-slope and cross-slope landings.
- Properly calculate power available and power required for high altitude LZs.
- Land within 2 rotors of intended landing point or lead aircraft.
- Pattern flown within +/- 50' and +/- 10 Kts.
- Conduct a standard approach to a no hover landing.

Prerequisites. ACAD-2281, SFAM-2102

**SRVL 2201      2.0      365      B,R,S,M      D      S      2      CFTDs**

Goal. Conduct single/dual-ship confined area takeoffs, approaches, and landings to a reduced visibility zone.

Requirements

Discuss:

- CRM
- Dynamic rollover
- Crosswind approaches
- Limitations on landing on unprepared and uneven surfaces
- Loss of visual reference during landing and takeoff
- Wave-off / departure procedures
- MFD/flight control mode optimization
- Obstacle clearance
- FLIR capabilities and limitations
- LZ Diagram briefing and planning considerations
- Cross cockpit landings
- NAVFLIR Day RVL Landing Code (R)

Introduce:

- Crosswind approaches
- Loss of visual reference during landing and takeoff
- Obstacle takeoffs and approaches
- MFD/flight control mode optimization
- LZ Diagrams
- Landing and departures to/from a CAL/MAL site
- Wave-off/departure procedures
- Cross cockpit landings

Review:

- Normal approaches
- Precision approaches
- Hover and no hover landings
- Low altitude emergencies

Performance Standards: On initial event, pilot under instruction shall fly pattern within 50' and 10 kts of briefed altitude/airspeed and land within 2 rotors of designated landing point by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Landings shall consist of various levels

of RVLs in simulated desert, maritime and arctic environments. Maintain safe obstacle clearance. Conduct a minimum of 5 landings as lead and 5 landings as wingman.

Prerequisites. ACAD-2180,2182, SMAL-2200

External Syllabus Support. (2) Linked CFTDs. In the event that linked CFTDs are not available, this event can be conducted in a single CFTD with a simulated aircraft as lead.

<b>CAL-2210</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain using all flight control modes.

Requirements

Discuss:

Same as SCAL 2200 and SRVL 2201

Introduce:

Same as SCAL 2200 and SRVL 2201

Review:

Same as SCAL 2200 and SRVL 2201

Performance Standards: On initial event, pilot under instruction shall fly pattern within 50' and 10 kts of briefed altitude/airspeed and land within 2 rotors of designated landing point by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Maintain safe obstacle clearance. Conduct a minimum of 5 landings.

Prerequisites. FAM-2104, SMAL-2200

Range Requirements. CAL/MAL site

<b>CAL-2211</b>	<b>2.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>D</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain. Execute reduced visibility approach techniques to a non-reduced visibility landing zone.

Requirements

Discuss:

CRM  
Obstacle clearance  
Full COMM and no COMM lead changes  
Tactical formations  
Cruise turn principles (radius of turn)  
Cross cockpit landings

Review:

LZ diagrams, planning, and briefing considerations

Performance Standards: Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point (lead) and maintain section integrity during approach and landing (wingman). On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Conduct a minimum of 4 landings as lead and 4 landings as wingman. Maintain safe obstacle clearance.

Prerequisites. FORM-2115, SRVL-2201, CAL-2210

Range Requirements. CAL/MAL site.

#### 2.9.4 Terrain Flight (TERF)

Purpose. To conduct TERF maneuvers, navigation, approaches, and section maneuvering in the daytime TERF environment.



General. TERF rules of conduct are IAW T&R Program Manual and local SOPs. A description of all TERF maneuvers can be found in ANTTP 3-22.3-CH53. Events should be flown using all flight control modes.

A PUI is TERF qualified when the following flights have been completed: ACAD-2380, STERF-2300, TERF-2310, 2311.

TERFI is required for all initial, refreshers or if not TERF qualified.

Crew Requirement. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be IAW the Terrain Flight stage event descriptions.

Prerequisite. The following events/designations are prerequisites prior to the commencement of the Terrain Flight stage:

Academic: ACAD-2380

Flight: SRVL-2201

Designation/Qualification: H2P

**ACAD-2380    1.0    \*    B    G**

Goal. Completion of CH-53K Terrain Flight (TERF) operations academic requirements.

Requirement. Complete all CH-53K TEF operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K TERF operations training.

**STERF-2300    2.0    \*    B    D    S    1    CFTD**

Goal. Conduct single ship TERF maneuvers and navigation.

Requirements

Discuss:

TERF profiles and maneuvers IAW ANTTP 3-22.3-CH53  
TERF rules of conduct IAW T&R Program Manual and local SOPs  
Comfort levels  
CRM  
Common terminology  
Route and checkpoint selection  
Route planning tools (JMPS)  
Orientation techniques  
Map preparation  
Maneuvering at low altitude and high gross weight/high density altitude  
High AOB turns/aerodynamic performance  
Low altitude emergencies  
Obstacle clearance  
Aircraft navigation system  
Enhanced terrain avoidance warning system (ETAWS)

Introduce:

Plan and brief a TERF route  
Masking/unmasking  
Quick stop  
TERF turn and roll  
Bunts  
Low level and contour profiles  
Tactical approaches  
Blade stall / high G cueing  
Enhanced terrain avoidance warning system (ETAWS)

Performance Standards: Safely control aircraft in the TERF environment. Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at

or below 200' AGL and/or within 200' of terrain. To the maximum extent possible TERF should be conducted for a total of 50 nm. Demonstrate correct procedure and usage of each TERF maneuver and approach. Demonstrate proficiency with aircraft navigation systems. Conduct at least 1 full COMM and 1 no COMM lead change.

**Prerequisites.** ACAD-2380, SRVL-2201

Instructor: TERFI required for initial flights, refreshers or if not TERF qualified

External Syllabus Support. CFTD

**TERF-2310      1.5      \*      B      D      A      1      CH-53K**

Goal. Conduct single ship TERF maneuvers and navigation.

## Requirements

Discuss:

Same as STERF-2300

Introduce:

Same as STERF-2300

**Performance Standards.** Same as STERF-2300

Prerequisites. CAL-2210, STERF-2300

Instructor: TERFI required for initial flights, refreshers or if not TERF qualified

Range Requirements. Approved TERF maneuver area/route

<b>TERF-2311</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S,M</b>	<b>D</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct section TERF maneuvers and navigation.

## Requirements

Discuss:

Same items as in TERF-2310, as it applies to section TERF concepts

Tactical flight considerations per ANTPP 3-22.3-CH53

## Tactical formation maneuvers in a TERF environment per ANTPP 3-22.3-CH53

Performance Standards. Same as TERF-2310 and incorporate tactical formation maneuvering in the navigation of the route which should be flown from both the lead and dash-2 position. Perform 1 full COMM and 1 no COMM lead change.

**Prerequisites.** FORM-2115 and TERF-2310.

Instructor: TERFI required for initial flights, refreshers or if not TERF qualified

Range Requirements. Approved TERF maneuver area/route.

### 2.9.5 Heavy Lift External Loads (EXT) (2400)

Purpose. To develop skills necessary for operating with external loads in all ambient conditions and flight regimes.

## General

Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTTTP series and Multi-Service Helicopter Sling Load Manual. Events should be flown using all flight control modes.

BIP required for EXT-2400-2402 and 2410-11 initial or refresher flights. NSI required for EXT-2420-2421, 2430 initial, refresher or when not NS qualified in light level event is conducted.

Crew Requirement. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the External stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the External stage:

Academic: ACAD-2480, 2481

Flight: SRVL-2201/SHLL-2105 for sims or FAM-2210 for flights

Designation/Qualification: H2P

**ACAD-2480      1.0      365      B,R,M      G**

Goal. Completion of CH-53K Heavy Lift (EXT) operations academic requirements.

Requirement. Complete all CH-53K EXT operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K EXT operations training.

**ACAD-2481      1.0      \*      B      G**

Goal. Completion of assault support to artillery operations academic requirements.

Requirement. Complete all assault support to artillery operations training modules.

Performance Standard. Per current evaluation criteria for assault support to artillery operations training.

**SEXT-2400      1.0      \*      B      D      S      1      CFTD**

Goal. Conduct heavy lift external operations.

Requirements

Discuss:

CRM  
Comfort level  
Preflight planning to include power computations, weight and balance considerations, and JMPS cargo load planning  
External load information/characteristics  
Hook preflight/Hook checks  
Fuel Dump procedures  
Form F  
Vortex Ring State  
Emergency procedures during external operations  
MFD set-up and usage for externals  
Shifts in CG with external and internal cargo  
Normal and emergency cargo release procedures  
Auto jettison  
Switchology  
Inadvertent hook release  
HST operation and safety brief  
Wave-off with the load  
Reduced visibility conditions  
Precision approach techniques  
Independent hook CG considerations  
Single and dual point external lift procedures

Introduce:

Techniques for heavy external lift operations  
Use of OEI HVY WT BIAS for simulating heavy lift external operations  
Emergency procedures during external operations

Performance Standards. Demonstrate a working knowledge of MSHSL Manual WRT basic equipment rigging procedures, load inspection and airspeeds. Execute 2 pickups in PFCS, 2 pickups in AFCS, and 1 pickup using PHLD or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery while maintaining +/- 10 degrees of assigned heading without using PHLD or flight director augmentation. On initial event, pilot under instruction shall fly to

this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Demonstrate the ability to plan and compute power requirements based on preflight planning and in flight/zone power computations using actual ambient conditions.

Prerequisites. H2P-1902, ACAD-2480,2481, SRVL-2201

External Syllabus Support. CFTD

<b>SEXT-2402</b>	<b>2.0</b>	<b>*</b>	<b>B,R,S</b>	<b>HLL</b>	<b>S</b>	<b>1</b>	<b>CFTD</b>
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Goal. Conduct NS external operations.

Requirements

Discuss:

Same as HLL-2220, SEXT-2400

Introduce:

NS HLL single/dual point externals to a confined area

Performance Standards. Demonstrate a working knowledge of MSHSL Manual WRT basic equipment rigging procedures, load inspection and airspeeds. Execute 2 pickups in PFCS, 2 pickups in AFCS, and 1 pickup using PHLD or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery while maintaining +/- 10 degrees of assigned heading without using PHLD or flight director augmentation. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Demonstrate the ability to plan and compute power requirements based on preflight planning and in flight/zone power computations using actual ambient conditions.

Prerequisites. SHLL-2105, SEXT-2400

Instructor. NSI required for initial flights, refresher or when not NS qualified in HLL conditions.

External Syllabus Support. CFTD

<b>EXT-2410</b>	<b>1.5</b>	<b>485</b>	<b>B,R,M</b>	<b>D</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct single point external operations.

Requirements

Discuss:

Same as SEXT-2400

Introduce:

Single point system preflight  
Single point external operations to a confined area  
External lift procedures  
In-flight weight and power computations  
In-zone weight and power computations

Performance Standards. Demonstrate a working knowledge of MSHSL Manual WRT basic equipment rigging procedures, load inspection and airspeeds. Execute 2 pickups in PFCS, 2 pickups in AFCS, and 1 pickup using PHLD or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery while maintaining +/- 10 degrees of assigned heading without using PHLD or flight director augmentation. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Demonstrate the ability to plan and compute power requirements based on preflight planning and in flight/zone power computations using actual ambient conditions.

Prerequisites. CAL-2210, SEXT-2400

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and single point loads

**EXT-2411      1.5      365      B,R,M                      D      A      1      CH-53K**

Goal. Conduct dual point external operations.

Requirements

Discuss:

Same as EXT-2410

Introduce:

Dual point system preflight  
Dual point external operations to a confined area  
External lift procedures  
In-flight weight and power computations  
In-zone weight and power computations  
Use of OEI HVY WT BIAS for simulating heavy lift external operations

Performance Standards. Same as EXT-2410.

Prerequisites. EXT-2410

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and dual point load

**EXT-2420      1.5      485      B,R,M                      HLL      A      1      CH-53K**

Goal. Conduct NS HLL single point external operations.

Requirements

Discuss:

Same as HLL-2220 and EXT-2410

Introduce:

NS HLL single point externals to a confined area

Review:

EXT-2410 and HLL-2220

Performance Standards. Same as EXT-2410

Instructor: NSI required for initial flights, refresher or when not NS qualified in HLL conditions

Prerequisites. HLL-2220, SEXT-2402, EXT-2410

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and single point load

**EXT-2421      1.5      180      B,R,S,M                      HLL      A      1      CH-53K**

Goal. Conduct NS HLL dual point externals.

Requirements

Discuss:

Same as HLL-2220 and EXT-2411

Introduce:

NS HLL dual point externals to a confined area

Review:

Same as HLL-2220 and EXT-2411  
Use of OEI HVY WT BIAS for simulating heavy lift external operations

Performance Standards. Same as EXT-2411

Instructor: NSI required for initial flights, refresher or when not NS qualified in HLL conditions

Prerequisite. EXT-2420

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and dual point load

**EXT-2430      1.5      180      B,R,S,M      LLL      A      1      CH-53K**

Goal. Conduct LLL NS external operations, dual point preferred.

Requirements

Discuss:

Same as EXT-2420,2421

Introduce:

LLL NS externals

Review:

EXT-2420,2421

Performance Standards. Execute 2 pickups in PFCS, 2 pickups in AFCS, and 1 pickup using PHLD or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery while maintaining +/- 10 degrees of assigned heading without using PHLD or flight director augmentation.

Instructor: NSI required for initial flights, refresher or when not NS qualified in LLL conditions

Prerequisites. NSQ-HLL, EXT-2420,2421 and CAL-2230.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and single or dual point load.

2.9.6 Ground Threat Reaction (GTR)

Purpose. To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics and on-board weapons systems to evade ground-to-air radar and non-radar threats.

General. Initial SGTR-2500, 2540 and 2541 shall be conducted in daytime conditions in the aircraft. Subsequent events may be conducted in the simulator. WTI or DMI is required for initial or refreshers. GTR events shall be flown with operational ASE, MWPC GAU-21 installed at a minimum. Pilots shall conduct this stage against an electromagnetic threat simulator.

Crew Requirement. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the GTR stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Ground Threat Reaction stage:

Academic: ACAD-2580-2589, NTTP 3-22.3 Appendix B

Flight: TERF-2311

Designation/Qualification: TERF Qualified

**ACAD-2580      1.0      365      B,R,S,M      G**

Goal. Completion of CH-53K APR-39 operations academic requirements.

Requirement. Complete all CH-53K APR-39 operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K APR operations training.

**ACAD-2581      1.0      365      B,R,S,M      G**

Goal. Completion of CH-53K ALE-47 operations academic requirements.

Requirement. Complete all CH-53K ALE-47 operations training modules.

**Performance Standard.** Per current evaluation criteria for CH-53K ALE-47 operations training.

<b>ACAD-2582</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K DIRCM operations academic requirements.

**Requirement.** Complete all CH-53K DIRCM operations training modules.

**Performance Standard.** Per current evaluation criteria for CH-53K DIRCM operations training.

<b>ACAD-2583</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>
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Goal. Completion of CH-53K Missile Warning System operations academic requirements.

**Requirement.** Complete all CH-53K Missile Warning System operations training modules.

Performance Standard. Per current evaluation criteria for CH-53K Missile Warning System operations training.

**ACAD-2584 1.0 365 B,R,M G**

Goal. Completion of IR SAM threat to Assault Support operations academic requirements.

Requirement. Complete all IR SAM threat to Assault Support operations training modules.

**Performance Standard.** Per current evaluation criteria for IR SAM threat to Assault Support operations training.

<b>ACAD-2585</b>	<b>1.0</b>	<b>365</b>	<b>B,R,M</b>	<b>G</b>
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Goal. Completion of ADA threat to Assault Support operations academic requirements.

Requirement. Complete all ADA threat to Assault Support operations training modules.

Performance Standard. Per current evaluation criteria for ADA threat to Assault Support operations training.

ACAD-2586	1.0	365	B,R,M	G
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Goal. Completion of RF SAM operations academic requirements.

Requirement. Complete all RF SAM operations training modules.

**Performance Standard.** Per current evaluation criteria for RF SAM operations training.

**ACAD-2587      1.0      \*      B      G**

Goal. Completion of radar principles academic requirements.

Requirement. Complete all radar principles training modules.

Performance Standard. Per current evaluation criteria for radar principles training.

**ACAD-2588 1.0 \* B G**

Goal. Completion of CH-53K DM/GTR operations academic requirements.

Requirement. Complete all CH-53K DM/GTR operations training modules.

**Performance Standard.** Per current evaluation criteria for CH-53K DM/GTR operations training.

**ACAD-2589 1.0 \* B G**

Goal. Completion of surface to air threat to the MAGTF operations academic requirements.

Requirement. Complete all surface to air threat to the MAGTF training modules.

**Performance Standard.** Per current evaluation criteria for surface to air threat to the MAGTF operations training.

<b>SGTR-2500</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S,M</b>	<b>D/NS</b>	<b>S</b>	<b>1</b>	<b>CFTD</b>
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Goal. Introduce ground threat reactions and ASE against ADA, IR and radar threats.

Requirements

Discuss:

- Operation of the ALE-47, APR-39, and MWS
- The strengths and weaknesses of each ASE versus ground-to-air threats
- Backplate settings
- Magazine IDs
- MDF and OFP
- CRM
- Tactical EW/IR countermeasures
- TACFORM
- Tactical maneuvering to counter surface to air threat
- Inter- and intra-aircraft communications and standard terminology
- Threat identification and rules of engagement
- 5 axioms of survival
- High, medium and low altitude tactics
- JMPS integration with ASE
- MFD threat display

Introduce:

- Search, acquisition, track, and missile alert signals of all applicable threat systems on APR-39 and MWS
- Tactical maneuvering and ASE employment to counter the threat
- Inter- and intra-aircraft communications and standard terminology
- High and medium altitude break maneuvers

Performance Standards. Effectively maneuver aircraft against various ground-based threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE. Execution of at least 1 line number should be accomplished using high or medium altitude tactics. Conduct forward, abeam, rear and any aspect engagements during non-radar GTR. Conduct range estimation, flat open terrain demo, ground clutter demo, terrain masking demo and an any aspect engagement during radar GTR.

Instructor: WTI or DMI required for initial flight

Prerequisites. ACAD-2580-2589 and TERF-2311

External Syllabus Support. CFTD with operable ASE

<b>GTR-2540</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A/S</b>	<b>2</b>	<b>CH-53K/CFTD</b>
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Goal. Conduct ground threat reactions and ASE familiarization.

Requirements

Discuss:

- Operation of the ALE-47, AAQ-24 and AAR-47
- The strengths and weaknesses of each ASE system versus non-radar ground-based threats
- Backplate settings
- Magazine IDs
- MDF AND OFP
- CRM
- IR countermeasures
- Tactical maneuvering to counter surface to air threat
- Inter- and intra-aircraft communications and standard terminology
- Threat identification and rules of engagement
- 5 axioms of survival
- High, medium and low altitude tactics
- MFD threat display
- The blue threat







Aircraft movement around the tanker  
Post HAAR procedures

Performance Standards. Demonstrate the ability to perform a successful join-up and movement to the observation position. Movement to a stable astern, refueling and disconnect position.

Instructor. ARI required for initial flights

Prerequisite. ACAD-2680, SFORM-2110

External Syllabus Support. CFTD

**HAAR-2610    1.5    \*    B    D    A    1+    CH-53K**

Goal. Conduct day HAAR, left hose preferred.

Requirements

Discuss:

Same as HAAR-2600

Review:

HAAR-2600

Performance Standards. Conduct the pre-contact checklist. Demonstrate the ability to perform a successful rendezvous, join-up and movement to the observation position. Movement to a stable astern, contact, refueling and disconnect position. Conduct post HAAR procedures. Initial qualification shall be performed right eat, left hose is preferred.

Prerequisite. FORM-2115, SHAAR-2600

Instructor. ARI required for initial flights and refreshers

Range Requirements. Special use airspace

External Syllabus Support. 1 KC-130 tanker

**HAAR-2611    1.5    180    B,R,S,M    D    A    1+    CH-53K**

Goal. Conduct day HAAR, left and right hose preferred.

Requirements

Discuss:

Same as HAAR-2600

Types of tanker rendezvous (per ATP-3.3.4.2)

Introduce:

Refueling from both sides of the tanker if available

No COMM procedures

Review:

HAAR-2610

Performance Standards. Same as HaAR-2610. Demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisite. HAAR-2610

Instructor. ARI required for initial flights and refreshers

Range Requirements. Special use airspace

External Syllabus Support. 1 KC-130 tanker

**HAAR-2640    1.5    180    B,R,S,M    NS    A    1+    CH-53K**

Goal. Conduct night HAAR with NS.

Requirements

Discuss:

Same as HAAR-2601

Introduce:

NS HAAR.

Performance Standards. Same as HAAR-2610. For initial qualification, demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisites. HAAR-2611. If flown under HLL conditions, HLL-2120. If flown under LLL conditions, NSQ HLL.

Instructor. ARI required for initial flights and refreshers. NSI/ARI is required if not NS qualified in light level event is conducted.

Range Requirements. Special use airspace

External Syllabus Support. KC-130 tanker

## 2.9.8 Aerial Gunnery (AG)

Purpose. To introduce AG employment.

General. Discuss and become familiar with all aspects of AG as described in NTRP 3-22.4-CH-53, Fundamentals of AG, the ANTTP 3-22.3-CH53 and appropriate NATOPS flight manual.

Crew Requirements. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Aerial Gunnery stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Aerial Gunnery stage:

Academic: ACAD-2880

Flight: FAM-2103

Designation/Qualification: H2P

<b>ACAD-2880</b>	<b>1.0</b>	<b>365</b>	<b>B,R,M</b>	<b>G</b>
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Goal. Completion of CH-53K weapons employment techniques academic requirements.

Requirement. Complete all CH-53K weapons employment techniques training modules.

Performance Standard. Per current evaluation criteria for CH-53K weapons employment techniques training.

<b>AG-2810</b>	<b>1.5</b>	<b>*</b>	<b>B,R,M</b>	<b>D</b>	<b>A</b>	<b>1+</b>	<b>CH-53K</b>
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Goal. Introduce day weapons employment.

Requirements

Discuss:

Door gun and tail gun nomenclature, capabilities, and limitations

Types of ammunition and ballistic effects

Safety considerations, malfunction procedures, jams, and hung ordnance procedures

Range procedures and course rules

Weapons conditions, fire control voice commands, and fire discipline

Range estimation and target engagement procedures

Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53

Platform left, Platform right

Firing in approach, landing, and departure profiles

Landing profile with tail gun installed

Introduce:

Ordnance loading, weapons preflight and operations, and post-flight

Implementation of fire control voice commands, and fire discipline  
Range estimation and target engagement  
Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53  
Landing profile with tail gun installed

Performance Standards. Demonstrate effective fire control voice commands and fire discipline. Maintain briefed flight profiles IAW ANTTP 3-22.3-CH53. Demonstrate appropriate target engagement IAW ANTTP 3-22.3-CH53.

Prerequisites. ACAD-2880,FAM-2103.

Ordnance. Minimum of 2 .50 Cal (TG optional), and appropriate .50 CAL ammo

Range Requirements. Live fire AG(.50 cal) approved.

**AG-2840      1.5      365      B,R,M      NS      A      1+      CH-53K**

Goal. Introduce NS weapons employment.

Requirements

Discuss:

Same as AG-2810  
Night adaptation and muzzle flash awareness  
Types of lasers, laser operations and safety per the ANTTP 3-22.3-CH53

Introduce:

Same as AG-2810 in night environment

Prerequisites. AG-2810, if flown HLL, HLL-2105. If flown LLL, NS HLLQ.

Instructor. NSI required if not NS qualified in light level event is conducted

Performance Standards. Same as AG-2810

Ordnance. Minimum of 2 .50 Cal (TG optional) and appropriate .50 CAL ammo

Range Requirements. Live fire AG range (.50 cal). Laser-capable range if required

## 2.9.9 Tactics (TAC)

Purpose. To plan, brief, execute, and debrief a tactical mission in a low to medium threat environment.

General. All Tactics events shall be based on at least one of the Marine Corps Tasks (MCTs) of an HMH squadron. The PUI will log the TAC code and the instructor will log both the TAC code and the Mission Skill Code(s) that applies. Initial TAC codes shall be accomplished as a section or higher; subsequent evolutions (when logged in conjunction with a Mission Skill) may be done single ship, based on the tactical scenario. The total number of aircraft, as specified, may be a dissimilar mix of aviation assets.

The PUI will assist in the planning, briefing, and debriefing of each flight. Pilots shall use the ANTTP 3-22.3-CH53 and CH-53K TPG / ASTACSOP 3-22.5 as source documents for planning and developing proficiency in planning, briefing, execution, and debriefing.

TAC events shall be flown with operational ASE, door guns (as required for the tactical scenario) installed at a minimum (rounds and expendables optional), whenever practical.

Crew Requirement. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures chalk talks, and lectures which shall be completed IAW the Tactics stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Tactics flight stage:

Academic: ACAD-2980-2984,  
Flight: CAL-2211  
Designation/Qualification: H2P

<b>ACAD-2980</b>	<b>1.0</b>	<b>365</b>	<b>B,R,M</b>	<b>G</b>
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Goal. Completion of Objective Area Planning (TAC) academic requirements.

**Requirement.** Complete all Objective Area Planning (TAC) training modules.

**Performance Standard.** Per current evaluation criteria for Objective Area Planning (TAC) training.

**ACAD-2981 1.0 \* B G**

Goal. Completion of CH-53K Rules of Engagement (ROE) academic requirements.

Requirement. Complete all CH-53K ROE training modules.

Performance Standard. Per current evaluation criteria for CH-53K ROE training.

**ACAD-2982      1.0      \*      B      G**

Goal. Completion of CH-53K Execution Checklist academic requirements.

Requirement. Complete all CH-53K Execution Checklist training modules.

Performance Standard. Per current evaluation criteria for CH-53K Execution Checklist training.

**ACAD-2983      1.0      \*      B      G**

Goal. Completion of CH-53K Problem Framing academic requirements.

**Requirement.** Complete all CH-53K Problem Framing training modules.

**Performance Standard.** Per current evaluation criteria for CH-53K Problem Framing training.

**ACAD-2984**      **1.0**      **\***      **B**      **G**

Goal. Completion of Assault Support Escort Tactics academic requirements.

**Requirement.** Complete all Assault Support Escort Tactics training modules.

**Performance Standard.** Per current evaluation criteria for Assault Support Escort Tactics training.

<b>STAC-2900</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>2</b>	<b>CFTDs</b>
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**Goal.** Conduct assault support tactical missions in a low threat environment.

## Requirements

Discuss:

CRM

## Planning based on METT-TC

## Route planning

### Objective area planning

KILSWITCH

JMPS-M CH-53 UPC Mission Data

JMPS-M CH-53 UPC Map Data

## Air and ground unit coordination

## Marine Aviation Command and Control System (MACCS)

Emissions control (EMCON), Transmission Security (TRANSEC) and Communication Security (COMSEC)

L-Hour (event versus time-driven)

## ASE considerations

Introduce:

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Tactical mission analysis, planning, briefing, execution and debriefing in support of assigned tasks

## Objective area planning

### MACCS utilization

EMCON, TRANSEC and COMSEC  
Mission smartpack

Performance Standards. Assist in planning a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Demonstrate an understanding of the MACCS. Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within  $\pm 30$  sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. ACAD-2980-2984, SGTR-2500

External Syllabus Support. (2) Linked CFTDs. In the event that linked CFTDs are not available, this event can be conducted in a single CFTD with a simulated aircraft as wing.

**TAC-2910      2.0      \*      B      D      A      2+      CH-53K**

Goal. Conduct assault support tactical missions in a low threat environment.

Requirements

Discuss:

Same as TAC-2900

Introduce:

Same as TAC-2900

Performance Standards. Assist in planning a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Demonstrate an understanding of the MACCS. Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within  $\pm 30$  sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. CAL-2211, TERF-2311 (if flown in TERF regime), STAC-2900, (AG-2810 if .50 cal to be employed)

Ordnance. 2 GAU-21 and appropriate rounds, and Chaff and Flare as required, to the max extent possible.

Range Requirements. Approved Live fire AG (.50 cal) range. Expendable approved range. CAL/MAL site. Approved TERF maneuver area/route

**TAC-2911      2.0      365      B,R,M      D      A      2+      CH-53K**

Goal. Conduct assault support tactical missions in a medium threat environment.

Requirements

Discuss:

Same as TAC-2900  
Flight leadership  
ITG considerations  
Embark and debark of troops and equipment  
Sectors of fire  
Escort considerations  
Fire Support Coordination considerations  
Weapons preflight, control, and employment

Review:

TAC-2910

Performance Standards. Plan and brief a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Demonstrate an understanding of the MACCS. Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within  $\pm 30$  sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisites. TAC-2910, (AG-2810 if .50 cal to be employed)

Ordnance. 2 .50 cal's and appropriate rounds, and Chaff and Flare as required, to the max extent possible

Range Requirements. Approved Live fire AG (.50 cal) range. Expendable approved range. CAL/MAL site. Approved TERF maneuver area/route.

#### 2.9.10 NS High Light Level (HLL)

**Purpose.** To develop skill in the use of NS under light levels greater than or equal to .0022 lux (HLL) as predicted by the Solar Lunar Almanac Prediction (SLAP) data and to qualify the PUI in NS HLL operations.

General. Aircrew not NSQ HLL require supervision of an NSI for all events flown with NS. Events should be flown using all flight control modes.

A PUI is NSQ HLL (qualified to transport troops in HLL conditions) when the following conditions have been met: SHLL-2105, HLL-2120, HLL-2220, HLL-2221, HLL-2320, HLL-2321, and HLL-2920 completed and logged a minimum of 6.0 hours of HLL NVG flight time in model. Pilots shall fly the above listed flights as well as HLL-2420 and HLL-2421 under ambient light conditions greater than or equal to .0022 lux.

Successful completion of ACAD 2190-2198 and HLL-2920 constitutes Night Systems Qualified (NSQ) HLL. A qualification letter signed by the Squadron Commanding Officer is required, stating the pilot is NSQ HLL to carry troops under HLL conditions. The original letter shall be placed in the pilot's NATOPS jacket, and a copy in the APR with a corresponding logbook entry.

Minimum Crew Requirements for all NS HLL flights. P/P/CC/AG/O.

**Academic Training.** The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the High Light Level stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the High Light Level flight stage:

Academic: ACAD-2190-2198.

Flight: SFAM-2100 for SHLL-2205, CAL-2210, TERF-2310.

Designation/Qualification: H2P

**ACAD-2190 1.0 \* B G**

Goal. Completion of assault AN/ANV-9 Components and Preflight Procedures academic requirements.

Requirement. Complete all assault AN/ANV-9 Components and Preflight Procedures training modules.

Performance Standard. Per current evaluation criteria for assault AN/ANV-9 Components and Preflight Procedures training.

**ACAD-2191      1.0      \*      B      G**

Goal. Completion of NVG systems and image characteristics academic requirements.

Requirement. Complete all NVG systems and image characteristics training modules.

**Performance Standard.** Per current evaluation criteria for NVG systems and image characteristics training.

**ACAD-2192      1.0      \*      B      G**

Goal. Completion of the night operational environment academic requirements.

Requirement. Complete all the night operational environment training modules.

**Performance Standard.** Per current evaluation criteria for the night operational environment training.

**ACAD-2193      1.0      \*      B      G**

**Goal.** Completion of NVG misperceptions and illusions academic requirements.

**Requirement.** Complete all NVG misperceptions and illusions training modules.



Performance Standard. Per current evaluation criteria for NVG misperceptions and illusions training.

**ACAD-2194    1.0    \*    B    G**

Goal. Completion of Night Vision Devices (NVD) route planning considerations academic requirements.

Requirement. Complete all NVD route planning considerations training modules.

Performance Standard. Per current evaluation criteria for NVD route planning considerations training.

**ACAD-2195    1.0    \*    B    G**

Goal. Completion of Night Operation and Planning aides academic requirements.

Requirement. Complete all Night Operation and Planning aides training modules.

Performance Standard. Per current evaluation criteria for Night Operation and Planning aides training.

**ACAD-2196    1.0    \*    B    G**

Goal. Completion of Human Factors academic requirements.

Requirement. Complete all Human Factors training modules.

Performance Standard. Per current evaluation criteria for Human Factors training.

**ACAD-2197    1.0    \*    B    G**

Goal. Completion of Circadian Rhythm and Fatigue academic requirements.

Requirement. Complete all Circadian Rhythm and Fatigue training modules.

Performance Standard. Per current evaluation criteria for Circadian Rhythm and Fatigue training.

**ACAD-2198    1.0    \*    B    G**

Goal. Completion of Intro to NVG Tactical Employment academic requirements.

Requirement. Complete all Intro to NVG Tactical Employment training modules.

Performance Standard. Per current evaluation criteria for Intro to NVG Tactical Employment training.

**SHLL-2105    2.0    \*    B    HLL    S    1    CFTD**

Goal. Introduce the operation and capabilities of aircraft NS.

Requirements

Discuss:

CRM utilizing NS  
NS emergency procedures  
Night scan and fixation  
Aircraft lighting  
NS preflight, donning, and adjustment procedures  
MFCD/ FLIR AAQ-29  
Simulator NS setup  
Differences in AN/AVS-9 NVGs  
Strengths and weaknesses of WP-B-01 NVGs

Introduce:

CRM utilizing NS  
NS emergency procedures  
Night scan and fixation  
Aircraft lighting  
NS preflight, donning, and adjustment procedures

ANVIS-7 Heads-Up Display (HUD)  
HUD operation, limitations, switchology, functionality/image  
FLIR operation, limitations, switchology, functionality/image  
Simulator NS setup

Performance Standards. Demonstrate basic proficiency, knowledge and the operation of all NS.

Prerequisites. ACAD-2190-2198, SFAM-2100.

Instructor. NSI required for initial flights

External Syllabus Support. CFTD. If CFTD is unavailable, a static aircraft with APP power is acceptable.

<b>HLL-2120</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>HLL</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct NS formation flight and navigation.

Requirements

Discuss:

Aircraft lighting  
Night tactical formation  
Closure rate  
Recovery from unusual attitudes  
CRM  
Comfort level  
NS emergencies  
Inadvertent IMC  
Dead reckoning techniques  
Low level hazards  
JMPS-M Mission Planning/topscene  
FLIR considerations  
Differences in AN/AVS-9 NVGs  
Strengths and weaknesses of WP-B-01 NVGs

Introduce:

NS formation flight  
NS tactical formation maneuvers  
NS navigation to include GPS and FLIR checkpoint identification  
JMPS topscene use

Review:

Combat Spread/Combat Cruise Formation principles

Performance Standards. Per ANTP 3-22.3-CH53 and MAWTS-1 NVD Manual. Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. Minimum altitude 200 feet AGL. Conduct at least 1 full COMM and 1 no COMM lead change. Successfully execute TACFORM maneuvers as lead and wingman IAW ANTP 3-22.3 CH-53. Successfully execute inadvertent IMC breakup and rendezvous IAW ASTACSOP.

Prerequisites. SHLL-2105 and FORM-2115.

Instructor. NSI required for initial flights, refreshers or when not HLL qualified.

<b>HLL-2220</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>HLL</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct HLL single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain using all flight control modes.

Requirements

Discuss:

CRM  
Landing zone Lighting

Cockpit lighting  
Low altitude emergencies  
NS failures  
Inadvertent IMC procedures  
Landings with reduced visibility  
Wave-offs  
FLIR capabilities and limitations  
Electro-Optic Tactical Decision Aid (EOTDA) data  
Solar/Lunar Almanac Program (SLAP), Sun Moon (SUMO) Tool, Solar/Lunar Almanac Calculations (SLAC)  
Night fixation and scan techniques  
MFCD Hover Display use for low work and approach procedures  
NAVFLIR Night RVL Landing Code (S)

Introduce:

NS CALs/MALs  
NS low work  
MFD Hover Display use for low work and approach procedures

Review:

FAM/INST-2101  
CAL-2210

Performance Standards. On initial event, pilot under instruction shall fly pattern within 50' and 10 kts of briefed altitude/airspeed and land within 2 rotors of designated landing point by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Maintain safe obstacle clearance. Conduct a minimum of 5 landings which shall consist of precision approach, a normal approach, a hover and a no hover landing, and a max gross weight takeoff and landing. Simulated max GW takeoffs and landings, power shall be limited to 5 percent above 10' hover power. Conduct NS low work.

Instructor. NSI required for initial flights, refreshers or when not NS HLL qualified.

Prerequisites. SHLL-2105 and CAL-2210.

Range Requirements. CAL/MAL site.

<b>HLL-2221</b>	<b>1.5</b>	<b>180</b>	<b>B,R,S,M</b>	<b>HLL</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS. Execute reduced visibility approach techniques to a non-reduced visibility landing zone.

Requirements

Discuss:

Same as CAL-2211 and HLL-2220

Introduce:

CRM  
Obstacle clearance  
Full COMM and no COMM lead changes  
Tactical Formations  
Section reduced visibility landings  
Cruise turn principles (radius of turn)  
Cross cockpit landings  
LZ diagram briefing and planning  
Loss of visual reference during landing  
Landing with reduced visibility  
Landing zone lighting  
Cockpit lighting  
Low altitude emergencies  
NS failures

IIMC procedures  
Wave-offs  
FLIR capabilities and limitations  
EOTDA data  
SLAP  
Night fixation and scan techniques  
Section takeoffs, approaches, landings, using NS  
Capabilities and effects of all aircraft exterior lighting

Review:

HLL-2120, CAL-2211, and HLL-2220

Performance Standards. Same as CAL-2211

Prerequisites. HLL-2120 and 2220.

Instructor. NSI required for initial flights, refresher or when not HLL qualified

Range Requirements. Approved CAL/MAL site

<b>HLL-2320</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>HLL</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct single ship TERF maneuvers and navigation while using NS.

Requirement

Discuss:

Same as TERF-2310  
TERF navigation considerations while using NS  
FLIR capabilities and limitations  
Cockpit lighting  
Low altitude emergencies  
NS failures  
Inadvertent IMC procedures  
Electro-Optic Tactical Decision Aid (EOTDA) data  
Solar Lunar Almanac Program (SLAP)  
Night fixation and scan techniques

Introduce:

TERF navigation flight while using NS

Review:

TERF-2310  
FLIR operations

Performance Standards. Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL and/or within 200' of terrain. To the maximum extent possible conduct TERF navigation for a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Masking/unmasking, quick stop, TERF turn, rolls, bunts, low-level and contour profiles all flown IAW the ANTTTP 3.22.3.

Prerequisite. SHLL-2105 and TERF-2310.

Instructor. NSI required for initial flights or when not HLL qualified.

Range Requirements. Approved TERF maneuver area/route.

<b>HLL-2321</b>	<b>1.5</b>	<b>180</b>	<b>B,R,S,M</b>	<b>HLL</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct section TERF maneuvers and navigation while utilizing NS.

Requirement

Discuss:

Same as TERF-2311 and HLL-2320

Introduce:

Section TERF navigation while utilizing NS

Review:

Same as TERF-2311 and HLL-2320

Performance Standards. Same as HLL-2320

Prerequisite. TERF-2311, HLL-2120, HLL-2320

Instructor. NSI required for initial flights, refreshers or when not HLL qualified

Range Requirements. Approved TERF maneuver area/route

**HLL-2920      2.0      365      B,R,S,M      HLL      A      2+      CH-53K**

Goal. Conduct assault support tactical missions in a low threat environment at night.

Requirements

Discuss:

Same as TAC-2910

NS planning, briefing, and execution considerations

Introduce:

NS planning, briefing, and execution considerations

Review:

TAC-2910

FLIR operations

Performance Standards. Same as TAC-2910

Prerequisite. HLL-2221 and 2321, TAC-2911. (AG-2810 if .50 cal to be employed).

Instructor. NSI required for initial qualification, refresher or if PUI not proficient

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53K T&R)

Range Requirements. Live fire AG(.50 cal) approved and laser safe range. CAL/MAL site. Approved TERF maneuver area/route

2.9.11 NS Low Light Level (LLL)

Purpose. To develop skill in the use of NS under light levels less than .0022 lux (LLL) as predicted by the Solar Lunar Almanac Prediction (SLAP) data and to qualify the PUI in NS LLL operations.

General. Aircrew not NSQ LLL require supervision of an NSI for all events flown with NS.

NS rules of conduct will be per the T&R Program Manual and this T&R; i.e. the PUI may begin the LLL syllabus when designated NSQ HLL. A PUI is NSQ LLL (qualified to transport troops in all light level conditions) when the following conditions have been met: SLLL-2106, LLL-2230, LLL-2231, LLL-2330, LLL-2331, and LLL-2930 completed and logged a minimum of 5.0 hours of LLL NVG flight time in model. Pilots shall fly the above listed flights and EXT-2430 under ambient light conditions of less than .0022 lux.

Successful completion of ACAD-2199, and LLL-2930 constitutes Night Systems Qualified (NSQ) LLL. A qualification letter signed by the Squadron Commanding Officer is required, stating the pilot is NSQ LLL to carry troops under LLL conditions. The original letter shall be placed in the pilot's NATOPS jacket, and a copy in the APR with a corresponding logbook entry.

Crew Requirements for all NS LLL flights. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Low Light Level stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Low Light Level stage flights:

Academic: ACAD-2199

Flight: NSQ-HLL  
Designation/Qualification: H2P

**ACAD-2199    1.0    \*    B    G**

Goal. Completion of Battlefield Illumination and ITG Planning Considerations academic requirements.

Requirement. Complete all Battlefield Illumination and ITG Planning Considerations training modules.

Performance Standard. Per current evaluation criteria for Battlefield Illumination and ITG Planning Considerations training.

**SLLL-2106    1.5    \*    B    LLL    S    1    CFTD**

Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS under LLL conditions.

Requirements

Discuss:

Same as CAL-2220  
LLL planning considerations

Introduce:

Same as CAL-2220 under LLL conditions

Performance Standards. Same as CAL-2220

Instructor. NSI required for initial flights or when not LLL qualified

Prerequisites. ACAD-2199, SHLL-2105

Range Requirements. 1 CFTD

**LLL-2230    1.5    \*    B    LLL    A    1    CH-53K**

Goal. Conduct LLL single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain using all flight control modes.

Requirements

Discuss:

Same as CAL-2220  
LLL planning considerations

Introduce:

Same as CAL-2220 under LLL conditions

Performance Standards. Same as CAL-2220

Instructor. NSI required for initial flights or when not LLL qualified

Prerequisites. SLLL-2106, NSQ HLL

Range Requirements. CAL/MAL site

**LLL-2231    1.5    180    B,R,S,M    LLL    A    2    CH-53K**

Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS under LLL conditions. Execute reduced visibility approach techniques to a non-reduced visibility landing zone.

Requirements

Discuss:

Same as CAL-2221  
LLL planning considerations

Introduce:

Same as CAL-2221 under LLL conditions

Performance Standards. Same as HLL-2221

Instructor. NSI required for initial flights, refreshers or when not LLL qualified

Prerequisites. LLL-2230

Range Requirements. CAL/MAL site

<b>LLL-2330</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>LLL</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct single ship TERF maneuvers and navigation under LLL conditions.

Requirement

Discuss:

Same as HLL-2320  
LLL planning considerations

Introduce:

Same as HLL-2320 under LLL conditions

Performance Standards. Same as HLL-2320

Instructor. NSI required for initial flights or when not LLL qualified

Prerequisites. SLLL-2106, NSQ HLL

Range Requirements. Approved TERF maneuver area/route

<b>LLL-2331</b>	<b>1.5</b>	<b>180</b>	<b>B,R,S,M</b>	<b>LLL</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct section TERF maneuvers and navigation under LLL conditions.

Requirements

Discuss:

Same as HLL-2321 and LLL-2330  
LLL planning considerations

Introduce:

Same as HLL-2321 under LLL conditions

Review:

Same as TERF-2311 and HLL-2321

Performance Standards. Same as HLL-2320

Instructor. NSI required for initial flights, refreshers or when not LLL qualified

Prerequisite. LLL-2330

Range Requirements. Approved TERF maneuver area/route

<b>LLL-2930</b>	<b>2.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>LLL</b>	<b>A</b>	<b>2+</b>	<b>CH-53K</b>
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Goal. Conduct assault support tactical missions in a medium threat environment during LLL conditions.

Requirements

Discuss:

Same as TAC-2911 and TAC-2920  
LLL planning considerations  
Effects of ordnance delivery on NS  
Battlefield Illumination  
Differences in AN/AVS-9 NVGs  
Strengths and weaknesses of WP-B-01 NVGs

Review:

## TAC-2911 and TAC-2920

Performance Standards. Same as TAC-2911

Instructor. NSI required for initial flights, refreshers or when not LLL qualified

Prerequisites. CAL-2231, TERF-2331 and HLL-2920 (AG-2810 if .50 cal to be employed)

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53K T&R)

Range Requirements. Live fire AG(.50 cal) approved and laser safe range. CAL/MAL site. Approved TERF maneuver area/route

### 2.10 MISSION PHASE

Purpose. To introduce and develop proficiency in tactical planning, briefing and execution of a HMH squadron's assigned Marine Corps Tasks. The Mission Phase has been developed to ensure that squadrons are capable of performing the Marine Corps Tasks (MCTs) assigned to a HMH Squadron. Core Skills are the enablers that allow crews to perform Mission Skills.

General. For initial, refresher, or when the aircrew under instruction are not proficient in a particular Mission Phase code, training codes shall be given by an instructor pilot that is proficient in that Mission Phase code(s). Mission Phase codes should be given to all those aircrew (Pilots, Crew Chief, AG/O) within the aircraft that meet the prerequisite. Additionally, for larger flights, any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Phase code can give the Mission Phase code to all aircrew within the flight that meet the prerequisite.

It is the intent that all TACEX scenarios in the Core and Core Plus Phase be based on a minimum of one of the Mission Phase events. If aircrew under instruction do not meet the prerequisite for the Mission Phase event, they will not log the Mission Phase event. However, the instructor of the Core or Core Plus Phase TACEX will log both the Core or Core Plus event and the Mission event (i.e: NSI logs a LLL-2930 and CAT-3140, PUI in the LLL syllabus logs a LLL-2930). Once aircrew have been designated NSQ LLL, all subsequent TACEXs should be coded with the appropriate Core or Core Plus and Mission Phase event provided aircrew under instruction meet all core event prerequisites. Aircrew that are not proficient in a Core or Core Plus event may update both the Core or Core Plus and the Mission Phase event on the same sortie.

Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL and Aviation Career Progression Model (ACPM) 8201-8206, 8208 and 8221-8228 complete.

The aircrew under instruction will assist in the mission analysis, planning, briefing, execution and debriefing of each flight. Aircrew shall use the ANTP series and NATOPS as source documents for planning, briefing, execution and debriefing.

Multiple Mission Phase training events may be logged per sortie (e.g. CAT-3140, AD-3240) as long as the requirement(s) is(are) met for each code. Mission Phase training events are intended to be flown and logged in conjunction with other T&R syllabus events (e.g. for pilots: CAT-3140, AD-3240, LLL-2930, EXT-2430, EXT-2441 and LLL-2331).

The PUI will log the TAC code and the instructor will log both the TAC code and the Mission Phase event(s) that apply. Initial TAC codes shall be accomplished as a section, subsequent evolutions (when logged in conjunction with a Mission Phase event) may be done single ship, based on the tactical scenario.

Mission Phase events shall be flown with operational ASE, .50 cal (as required for the tactical scenario) installed at a minimum (rounds and expendables optional), whenever practical.

Initial attempts to complete Mission Phase events shall be made in the aircraft, subsequent attempts may be accomplished in the simulator.

As of the signing of this manual, the current HMH Core MCTs are as follows:

MCT 1.3.4.1 Combat Assault Transport (CAT)

MCT 4.3.4.1 Heavy Rotary Wing Air Delivery (AD)

MCT 6.2.2.1 Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)

MCT 6.2.2 Air Evacuation (AE)

Crew Requirements. P/P/CC/AG/O



Mission Skill Proficiency. To attain and maintain Mission Skill Proficiency (MSP) in CAT, AD, TRAP and AE, the pilot shall be Core Skill Proficient (CSP) in all required skills for the specific stage in order to count toward CMMR. For example, to be a qualified crew member for TRAP, the HAC must be GTR CSP: 2580,2581,2582,2583,2584, 2585,2586,2587,2588,2589,2500,2540,2541 // AG CSP: 2880,2810,2840 // NS LLL CSP: 2199,2106,2230,2231, 2330,2331,2930 // EXT CSP: 2480,2481,2400,2402,2410,2411,2420,2421,2430 // HAAR CSP: 2680,2600,2610, 2611,2640

Stages. The following stages are included in the Mission Skill phase.

MISSION SKILL PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.11.1	2-85
COMBAT ASSAULT TRANSPORT (CAT)	2.11.2	2-86
HEAVY ROTARY WING AIR DELIVERY (AD)	2.11.3	2-87
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)	2.11.4	2-87
AIR EVACUATION (AE)	2.11.5	2-88

## 2.11 MISSION STAGES

### 2.11.1 Academic Training

Purpose. Prior to commencement of each event within the Mission Phase, the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

The Mission Skill academic/ground training shall be complete IAW the POI requirements and prerequisites. Upon completion, the PUI shall report to the PTO or designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

NIPR 2000-6000 classes will be located at the MAWTS-1 NIPR website under ASD, CH-53K, T&R:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes will be located at the MAWTS-1 SIPR website under ASD, CH-53K, T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Mission Skill Phase.

Academic: See event; ACPM 8201-8206, 8208 and 8221-8228

Flight: LLL-2930

Designation/Qualification: NSQ-LLL

#### **ACAD-3080    1.0    \*    B    G**

Goal. Completion of R2P2 academic requirements.

Requirement. Complete all R2P2 training modules.

Performance Standard. Per current evaluation criteria for R2P2 training.

#### **ACAD-3081    0.7    \*    B    G**

Goal. Completion of Contested EMS Operations and Mitigation academic requirements.

Requirement. Complete all Contested EMS Operations and Mitigation training modules.

Performance Standard. Per current evaluation criteria for Contested EMS Operations and Mitigation training.

#### **ACAD-3082    0.8    \*    B    G**

Goal. Completion of NEO Execution academic requirements.

Requirement. Complete all NEO Execution training modules.

Performance Standard. Per current evaluation criteria for NEO Execution training.

**ACAD-3083      0.8      \*      B      G**

Goal. Completion of ACE Intelligence Preparation of the Battlespace academic requirements.

Requirement. Complete all ACE Intelligence Preparation of the Battlespace training modules.

Performance Standard. Per current evaluation criteria for ACE Intelligence Preparation of the Battlespace training.

**ACAD-3084      1.0      \*      B      G**

Goal. Completion of Personnel Recovery academic requirements.

Requirement. Complete all Personnel Recovery training modules.

Performance Standard. Per current evaluation criteria for Personnel Recovery training.

**ACAD-3085      1.0      \*      B      G**

Goal. Completion of TRAP TTP's academic requirements.

Requirement. Complete all TRAP TTP's training modules.

Performance Standard. Per current evaluation criteria for TRAP TTP's training.

**ACAD-3086      0.5      \*      B      G**

Goal. Completion of CASEVAC academic requirements.

Requirement. Complete all CASEEVAC training modules.

Performance Standard. Per current evaluation criteria for CASEVAC training.

2.11.2 Combat Assault Transport (CAT)

**CAT-3140      2.0      180\*      B,R,S,M      (N)      A/S      2+      CH-53K/Linked CFTD**

Goal. Demonstrate the capability to conduct combat assault transport operations in a low to medium threat environment. Aviation combat assault transport operations provides mobility to the MAGTF. It is used to deploy forces (air-landed or air-delivered) efficiently in offensive maneuver warfare, bypass obstacles, or quickly redeploy forces. CAT allows the MAGTF Commander to build up his forces rapidly at a specific time and location and allows him to apply and sustain combat power and strike the enemy where he is unprepared. This function comprises those actions required for the airlift of personnel, supplies and equipment into or within the battle area by helicopter, tiltrotor or fixed-wing aircraft. (JP 3-0, 4-0, MCWP 3-20, MAWTS-1).

Requirements

Discuss:

Same as 2930

Performance Standard. Plan, brief and execute a tactical assault support mission (MARLOG, general support, NEO, resupply, insert, extract). If an L-Hour is utilized arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Demonstrate a thorough understanding of objective area mechanics, command and control procedures, and fire support control measures.

Prerequisites. NSQ LLL, ACAD-3080-3083, ACPM 8201-8206, 8208 and 8221-8228, 8361-8367

Ordnance. IAW Phase.

Range Requirement. Live fire and expendable range as required.

External Syllabus Support. Command and Control system if available. Escort and/or Command and Control aircraft are preferred, if available. Ground Combat Element preferred if available.

### 2.11.3 Heavy Rotary Wing Air Delivery (AD)

<b>AD-3240</b>	<b>2.0</b>	<b>180</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>A/S</b>	<b>2+</b>	<b>CH-53K/ Linked CFTD</b>
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Goal. Demonstrate the ability to conduct heavy rotary wing air delivery (AD) in a low to medium threat environment. AD is in-flight transportation of equipment and supplies to remote areas or expeditionary sites [tactical landing zones, austere forward operating sites, Naval shipping, Forward Operating Bases (FOBs), Expeditionary Airfields (EAFs), Forward Arming and Refueling Points (FARPs), etc.]. AD operations are performed by fixed-wing, tiltrotor or rotary-wing aircraft when it is more advantageous not to land. Delivery can be accomplished with aircraft internal/external loads, or loads can be air dropped using specially rigged aerial delivery equipment and systems. AD operations require detailed planning and integration at all levels and must support units in a rapidly changing environment.(JP 1, 3-0, 4-0, MCWP 3-20, MCTP 3-01B, MCTP 3-20A, 4-1, 4-11, 4-11.3, NDP-4, NWP 4-01, NAVSUP PUB Series)

#### Requirement

##### Discuss:

JMPS cargo loading application  
Same as EXT-2430  
Same as LLL-2930  
Same as HIE 4110, 4140, or 4141

Performance Standard. Plan, brief and execute an air delivery mission in a low to medium threat environment. If an L-Hour is utilized arrive in the LZ +/- 30 sec.

Prerequisites. NSQ LLL, ACPM 8201-8206, 8208 and 8221-8228, 8365

Ordnance. IAW Phase

Range Requirement. Live fire range and approved drop zone as required

External Syllabus Support. HST, as required. Jump master and ground safety personnel, as required.

### 2.11.4 Tactical Recovery of Aircraft and Personnel (TRAP)

<b>TRAP-3340</b>	<b>2.0</b>	<b>180</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>A/S</b>	<b>2+</b>	<b>CH-53K/ Linked CFTD</b>
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Goal. Demonstrate the ability to conduct TRAP in a low to medium threat environment. TRAP is performed for the specific purpose of the recovery of personnel, equipment, and/or aircraft. TRAP is conducted to locate and extract distressed personnel and sensitive equipment from enemy controlled area during wartime or contingency operations to prevent capture. TRAP is performed by an assigned and briefed aircrew and is a subcomponent of Joint Personnel Recovery (PR). A TRAP mission may include personnel to conduct the search portion of recovery missions. The composition of a tactical recovery mission may vary from a single aircraft and aircrew to an assault support mission package that consists of multiple fixed-wing and rotary-wing aircraft with an onboard compliment of security, ground search, and medical personnel. (JP 1, 3-0, 3-50.2, MCRP 2-10A.2, 3-2, MCTP 3-01B, MCTP 3-20E, MCRP 3-20F.2, NDP 1, NWP 3-05)

#### Requirements

##### Discuss:

TRAP template from ASTACSOP  
ISR employment  
Rescort considerations  
Rescue Vehicle responsibilities  
ISOPREP verification considerations  
RMC (Sandy) / On Scene Commander command and control considerations  
Survival Radio operation  
PR 15 line

Performance Standard. Plan, brief and execute a TRAP mission. Properly employ TRAP template. Effectively communicate with Isolated Personnel, Rescort, RMC and other supporting aircraft.

Prerequisites. NSQ-LLL, ACAD-3084,3085, ACPM 8201-8206, 8208 and 8221-8228

Ordnance. IAW Phase

Range Requirement. Live fire and expendable range as required

External Syllabus Support. Escort 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.

## 2.11.5 AIR EVACUATION

**AE-3440      2.0      180      B,R,S,M      (N)      A/S      2+      CH-53K/ Linked CFTD**

Goal. Demonstrate the ability to conduct an AE operation in a low to medium threat environment. AE is the transportation of personnel and equipment from areas of operations to secure rear areas, to include casualty evacuations (CASEVAC), extraction of forces, or civilians. Transport helicopters, tiltrotor, and fixed-wing transport aircraft perform AE. (JP 3-10.1, MCDP 1-0, MCWP 3-20, MCTP 3-01B, MCTP 3-10F, MCTP 3-20E, 3-25, MCRP 3-20.3, 3-36-)

### Requirements

#### Discuss:

- Casualty priorities
- Medical facility levels
- Aircraft configuration considerations

Performance Standard. Plan, brief and execute a tactical air evacuation mission. If an L-Hour is utilized arrive in the LZ +/- 30 sec in a position to best support the ground combat element.

Prerequisites. NSQ-LLL, ACAD-3086, ACPM 8201-8206, 8208 and 8221-8228

Ordnance. IAW Phase

Range Requirement. Live fire and expendable range as required

External Syllabus Support. Ground Combat Element and/or Logistics Combat Element is preferred if available

## 2.12 CORE PLUS PHASE

Purpose. To introduce and develop proficiency in the execution of the Core Plus events required as a pilot within a HMM. Core Plus Phase events have a low probability of execution or are theater specific and are not included in the unit readiness evaluation.

General. The following events within this phase require a proficient BIP for all initial/Refresher flights:

HIE-4110, 4140, 4141

BI-4340

CBRN-4600

TAC-4940 & 4942(if done during the day)

All Mission Plus events shall follow the guideline of the Mission Phase section.

Stages. The following stages are included in the Mission Plus Phase of training.

CORE PLUS PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.13.1	2-89
HELICOPTER INSERTION/ EXTRACTION (HIE)	2.13.2	2-89
BATTLEFIELD ILLUMINATION (BI)	2.13.3	2-91
TERRAIN FLIGHT / INDEPENDENT HOOK EXTERNALS (TERF / IND EXT)	2.13.4	2-92
DEFENSIVE MEASURES (DM)	2.13.5	2-94
CHEMICAL/ BIOLOGICAL/ RADIOLOGICAL/ NUCLEAR (CBRN)	2.13.6	2-97
FIELD CARRIER LANDING PRACTICE (FCLP)	2.13.7	2-98
CARRIER QUALIFICATION (CQ)	2.13.8	2-99
UNAIDED CARRIER QUALIFICATION (UNAIDED CQ)	2.13.9	2-101
TACTICS (TAC)	2.13.10	2-102

Conditions. Within the stages all training codes are further broken down according to ambient conditions.

- (XX00) Sim
- (XX10) Daylight
- (XX20) High Light Level
- (XX30) Low Light Level
- (XX40) Can be done High or Low Light Level

## 2.13 CORE PLUS STAGES

### 2.13.1 Ground/Academic Training

Purpose. Within the Core Plus Phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

The Core Plus Phase academic/ground training shall be complete IAW the POI requirements and prerequisites for the stage. Upon completion, the PUI shall report to the PTO or designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

NIPR 2000-6000 classes will be located at the MAWTS-1 NIPR website under ASD, CH-53K, T&R:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes will be located at the MAWTS-1 SIPR website under ASD, CH-53K, T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Core Plus Phase.

- Academic: See event
- Flight: See event
- Designation/Qualification: H2P

### 2.13.2 Helicopter Insertion & Extraction Techniques (HIE)

Purpose. To introduce HIE methods required in executing special operations.

General. The pilots shall conduct a brief with the supported unit. NSI required if not qualified in light level.

Crew Requirements. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53K Course Catalog contains the required readings and chalk talks which shall be completed IAW the Helicopter Insertion & Extraction Techniques event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Helicopter Insertion & Extraction Techniques:

- Academic: See event
- Flight: CAL-2311
- Designation/Qualification: H2P

**ACAD-4180      0.5      \*      B      G**

Goal. Completion of HIE academic requirements.

Requirement. Complete all HIE training modules.

Performance Standard. Per current evaluation criteria for HIE training.

**HIE-4110      1.5      485      B,R,M      (NS)      A      1      CH-53K**

Goal. Conduct tactical insertion of a ground force via helocast.

Requirements

Discuss:

- CRM
- Safety precautions
- Training master procedures
- Signals/communications with jump master
- Obstacle clearance
- Precision taxi techniques over water
- Emergency procedures
- Vertigo and visual illusions
- MFCD Hover Display Utilization
- Tail rotor clearance
- Airspeed for helocast
- Responsibilities and duties of Helocast Master
- Responsibilities and duties of the HAC
- Responsibilities and duties of the Crew Chief
- Standard terminology
- Soft duck vs Hard duck
- MCRP 3-11.3XX series Special Forces Waterborne Operations

Introduce:

- Techniques for inserting personnel by helocast
- Signals/communications with jump master
- Precision taxi

Performance Standards. Execute approach/hover within  $\pm 5$  ft/ $\pm 3$  kts of intended altitude and ground speed.

Prerequisites. ACAD-4180. CAL-2210 if conducted during day conditions. HLL-2220 if conducted under HLL conditions. LLL-2230 if conducted under LLL conditions.

Instructor. NSI required if not qualified in light level

Range Requirements. Approved helocast drop zone

External Syllabus Support. Jump master, safety boat and safety personnel

<b>HIE-4140</b>	<b>1.5</b>	<b>*</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct tactical insertion and/or extraction of a ground force via fast rope, rappelling, or SPIE.

Requirements

Discuss:

- CRM
- Safety precautions
- Signals/communications with HRST master
- Training master procedures
- Rescue Hoist procedures and types of operations
- Obstacle clearance
- Precision hover/hover performance
- Emergency procedures to include NS emergencies if flown at night
- MFCD Hover Display Utilization
- MCRP 3-11.4XX series Helicopter Rope Suspension Techniques

Introduce:

- Techniques for inserting personnel by fastrope, rappelling, or SPIE
- Signals/communications with HRST master
- Precision hover

Performance Standards. Execute approach and hover within  $\pm 5'$  of intended altitude and within 2 meters of intended spot.

Prerequisites. ACAD-4180. CAL-2210 if conducted during day conditions. HLL-2220 if conducted under HLL conditions. LLL-2230 if conducted under LLL conditions.

Instructor. NSI required if not qualified in light level.

Range Requirements. Suitable CAL/MAL site

External Syllabus Support. HRST Master and ground safety personnel

**HIE-4141      1.5      \*      B,R,M      (NS)      A      1      CH-53K**

Goal. Conduct tactical insertion via para ops.

Requirements

Discuss:

- CRM
- Safety precautions
- Signals/communications with jump master
- Training master procedures
- Obstacle clearance
- Emergency procedures to include NS emergencies
- MFD Moving Map utilization
- Static vs. Freefall
- JPAD planning considerations

Introduce:

- Techniques for inserting personnel by para ops
- Signals/communications with jump master

Performance Standards. Fly within  $\pm 50'$  of designated altitude and  $\pm 5$  kts of designated airspeed.

Prerequisites. ACAD-4180. CAL-2210 if conducted during day conditions. HLL-2220 if conducted under HLL conditions. LLL-2230 if conducted under LLL conditions.

Instructor. NSI required if not qualified in light level.

Range Requirements. Approved drop zone

External Syllabus Support. Jump master and ground safety personnel

### 2.13.3 Aviation-Delivered Battlefield Illumination (BI)

Purpose. To develop the ability to safely and accurately plan, brief and deploy Aircraft Parachute Flares (APF) from the CH-53K, in support of air or ground forces.

General. Review operational and safety considerations discussed in the NATOPS Flight Manual, ANTP 3-22.3-CH-53 and NTRP 3-22.4 CH-53K.

NSI required if not qualified in light level.

Crew Requirement. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Aviation-Delivered Battlefield Illumination stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Aviation-Delivered Battlefield Illumination stage:

- Academic: N/A
- Flight: CAL-2210
- Designation/Qualification: H2P

**BI-4340      1.0      1095      B      NS      A      1      CH-53K**

Goal. Conduct Aviation-Delivered Battlefield Illumination in support of night tactical operations.

Requirements

Discuss:

- APF components
- Number of APFs required to achieve a desired light level
- Forecast wind and APF drift calculations
- Release altitude considerations (vertical problem)
- Required Airspace Coordination Measures (ACM)
- Cabin configuration and aircrew position during employment
- ICS Procedures and deployment commands
- APF Time On Target (TOT)
- Threat considerations
- Emergency procedures

Introduce:

- APF deployment in a tactical environment

Performance Standards. The PUI will demonstrate a familiarity with the components, characteristics, and operation of APFs and be capable of planning the employment of APFs in all light levels and threat environments. The PUI will have a thorough understanding of aircraft cabin setup and aircrew communication procedures in accordance with the ANTTP 3-22.3-CH-53, as well as a working knowledge of emergency procedures described in the NTRP 3-22.4 CH-53. Fly within 50' of designated ALT and 5 kts of intended airspeed.

Instructor. NSI required if not qualified in light level

Prerequisites. CAL-2210

Range Requirements. Approved range for the deployment of APFs

Ordnance Requirements. LUU-2 or LUU-19 Series APFs

#### 2.13.4 Terrain Flight External Loads (EXT)

Purpose. To develop skills necessary for operating with external loads in all ambient conditions in the terrain flight regime. To develop skills necessary for operating the independent hook system.

General. Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTTP series and Multi-Service Helicopter Sling Load Manual.

TERFI required for SEXT-4412, EXT-4440 initial, refresher or when not TERF qualified.

NSI required for EXT-4440, 4441 initial, refresher or when not NS qualified in light level event is conducted.

Crew Requirement. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the External stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Terrain Flight External stage:

- Academic: ACAD-4480
- Flight: EXT-2400.
- Designation/Qualification: H2P

<b>ACAD-4480</b>	<b>0.7</b>	<b>*</b>	<b>B</b>	<b>G</b>
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Goal. Completion of Independent Hook academic requirements.

Requirement. Complete all Independent Hook training modules.

Performance Standard. Per current evaluation criteria for Independent Hook training.

<b>SEXT-4411</b>	<b>2.0</b>	<b>485</b>	<b>B,R,S,M</b>	<b>(NS)</b>	<b>S</b>	<b>1</b>	<b>CFTD</b>
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Goal. Conduct Independent point external operations.



## Requirements

### Discuss:

Same as EXT-2400  
Independent / triple point considerations  
Pick-up and delivery techniques  
Emergency procedures

### Introduce:

Techniques for Independent / triple point external lift operations  
Emergency procedures during external operations

**Performance Standards.** Demonstrate a working knowledge of MSHSL Manual WRT basic equipment rigging procedures, load inspection and airspeeds. Execute 5 pickups and deliveries(or demonstrate proficiency) as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery while maintaining  $\pm 10$  degrees of assigned heading. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Flight should be conducted while operating in conditions approaching aircraft maximum gross weight or a performance limit, within the boundaries of existing safety considerations. Demonstrate the ability to plan and compute power requirements based on weight and power and in zone power computations using actual ambient conditions.

**Instructor.** TERFI required for all initial and refresher flights

**Prerequisites.** ACAD-4480, SEXT-2402

**External Syllabus Support.** CFTD

**SEXT-4412      1.5      365      B,R      (NS)      S/A      1      CFTD/CH-53K**

**Goal.** Conduct external flight in the TERF profile in a day and night environment.

## Requirement

### Discuss:

Same as EXT-2401 and EXT-2410 or EXT-2411

### Introduce:

TERF externals

### Review:

Single and/or dual point procedures  
TERF maneuvers

**Performance Standards.** Demonstrate a working knowledge of MSHSL Manual WRT basic equipment rigging procedures, load inspection and airspeeds. Fly within 50' and 10 kts of briefed altitude and airspeed and deliver load within 5 meters of intended point of delivery while maintaining  $\pm 10$  degrees of assigned heading. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Maintain situational awareness with regards to load clearance and limited power considerations while conducting TERF maneuvers. Demonstrate the ability to plan and compute power requirements based on weight and power and in zone power computations using actual ambient conditions. Minimum of 1 pickup and delivery required.

**Instructor.** TERFI required for all initial and refresher flights

**Prerequisite.** SEXT-2402.

**Range Requirements.** Approved CAL/MAL site. Approved TERF maneuver area/route

**External Syllabus Support.** CFTD and MCAT if conducted in sim. HST, single or dual point load if conducted in the aircraft.

**EXT-4440      1.5      365      B,R,M      (NS)      A/S      1      CH-53K**

**Goal.** Conduct external flight in the TERF profile under day or night conditions.

### Requirements

#### Discuss:

Same as EXT-4412, EXT-2420 or EXT-2421  
Terrain/obstacle clearance  
Route planning considerations  
Light level planning considerations

#### Introduce:

TERF externals in the night environment

#### Review:

Single and/or dual point procedures  
TERF maneuvers

Performance Standards. Same as EXT-4412

Instructor. NSI required for initial flights, refreshers or when not NS qualified in the light level event is conducted.

Prerequisite. EXT-4412. If conducted under HLL conditions: TERF-2320, EXT-2420 (if single point) and EXT-2421 (if dual point). If conducted under LLL conditions: NSQ-HLL, TERF 2330 and EXT-2430. EXT-4441 (if independent hook)

Range Requirements. CAL/MAL site. TERF maneuver area/route

External Syllabus Support. Initial events to be conducted in the aircraft. CFTD and MCAT if conducted in sim. HST, single or dual point load if conducted in the aircraft.

<b>EXT-4441</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S</b>	<b>(NS)</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct Independent / triple point external operations.

### Requirements

#### Discuss:

Same as SEXT-4411.

#### Introduce:

Independent / triple point system preflight  
Independent / triple point external operations to a confined area  
Independent / triple point lift procedures  
In-flight weight and power computations  
In-zone weight and power computations

Performance Standards. Demonstrate a working knowledge of MSHSL Manual WRT basic equipment rigging procedures, load inspection and airspeeds. Execute 5 pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, deliver load within 5 meters of intended point of delivery while maintaining +/- 10 degrees of assigned heading. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Demonstrate the ability to plan and compute power requirements based on weight and power and in zone power computations using actual ambient conditions..

Prerequisites. SEXT-4411. If conducted under HLL conditions: TERF-2320, If conducted under LLL conditions: NSQ-HLL, TERF 2330.

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and dual point load

### 2.13.5 Defensive Measures (DM)

Purpose. To develop proficiency in evading enemy air threats incorporating ASE in a medium threat environment. Upon completion of this stage, the pilot will be able to effectively maneuver to evade, in a multi-plane flight, low altitude air-to-air threats.

General. Pilots shall conduct this stage against Fixed Wing (FW) and Rotary Wing (RW) threats. Aggressor aircraft shall simulate enemy aircraft capabilities to the max extent possible. PUI is DM qualified upon completion of DM-4510 and DM-4511.

Crew Requirements. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Defensive Measures stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Defensive Measures stage:

Academic: NTTP 3-22.3 Appendix A. ACAD-4580-4584

Flight: TERF-2311

Designation/Qualification: TERF Qualified

**ACAD-4580      1.5      \*      B      G**

Goal. Completion of CH-53 DM/GTR II academic requirements.

Requirement. Complete all CH-53 DM/GTR II training modules.

Performance Standard. Per current evaluation criteria for CH-53 DM/GTR II training.

**ACAD-4581      1.0      \*      B      G**

Goal. Completion of DM Game Planning academic requirements.

Requirement. Complete all DM Game Planning training modules.

Performance Standard. Per current evaluation criteria for DM Game Planning training.

**ACAD-4582      1.0      \*      B      G**

Goal. Completion of Helicopter PS and EM academic requirements.

Requirement. Complete all Helicopter PS and EM training modules.

Performance Standard. Per current evaluation criteria for Helicopter PS and EM training.

**ACAD-4583      0.5      \*      B      G**

Goal. Completion of Attack Helicopter Threat to Assault Support academic requirements.

Requirement. Complete all Attack Helicopter Threat to Assault Support training modules.

Performance Standard. Per current evaluation criteria for Attack Helicopter Threat to Assault Support training.

**ACAD-4584      1.0      \*      B      G**

Goal. Completion of Fixed-Wing Threat to Assault Support academic requirements.

Requirement. Complete all Fixed-Wing Threat to Assault Support training modules.

Performance Standard. Per current evaluation criteria for Fixed-Wing Threat to Assault Support training.

**DM-4510      1.5      365      B,R,M      D      A      2      CH-53K**

Goal. Conduct section DM against a rotary wing aggressor.

Requirements

Discuss:

CRM

Standard terminology

Five axioms of survival

DM training rules  
Ps and EM  
DM game planning  
Friendly weapons employment  
ASE utilization  
MFCD threat display  
Aircraft Categories  
Adversary aircraft parameters  
Adversary weapons envelopes  
Mutual support  
Section tactical maneuvers  
Pre and post merge maneuvers  
1 circle vs 2 circle fight  
Free and engaged roles and responsibilities  
ACM against actual threats in comparison to DM training

Introduce:

Section tactical maneuvers in response to a threat helicopter  
ACM

Performance Standards. Demonstrate understanding of friendly and enemy energy states. Effectively maneuver aircraft against various rotary wing threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate and correctly apply 5 axioms of DM. Demonstrate working knowledge of ASE. Conduct range estimation/weapons profile demo, forward hemisphere attack (extension and turn), abeam attack, rear hemisphere attack and an any aspect engagement.

Instructor. DMI required for initial flights, refreshers or when not DM qualified.

Prerequisite. ACAD-4580-4584, TERF-2311.

Ordinance. 60 flares

Range Requirements. Special use airspace. Expendable capable range. Approved TERF maneuver area

External Syllabus Support. RW aircraft to serve as aggressor

<b>DM-4511</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M</b>	<b>D</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct section DM against a fixed wing aggressor.

Requirements

Discuss:

CRM  
Standard terminology  
Five axioms of survival  
Ps and EM  
DM game planning  
Friendly weapons employment  
ASE utilization  
MFCD threat display  
Aircraft Categories  
Adversary aircraft parameters  
Adversary weapons envelopes  
Mutual support  
Section tactical maneuvers  
Pre and post merge maneuvers  
1 circle vs 2 circle fight  
Free and engaged roles and responsibilities  
ACM against actual threats in comparison to DM training

Introduce

Section tactical maneuvers in response to a fixed wing aircraft

## ACM

Performance Standards. Demonstrate understanding of friendly and enemy energy states. Effectively maneuver aircraft against various fixed wing threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate and correctly apply 5 axioms of DM. Demonstrate working knowledge of ASE. Conduct range estimation/weapons profile demo, forward hemisphere attack (level turn, pop and extension), abeam attack, rear hemisphere attack and an any aspect engagement.

Instructor. DMI required for initial flights, refreshers or when not DM qualified

Prerequisites. ACAD-4580-4584, TERF-2311

Ordnance. 60 flares

Range Requirements. Special use airspace. Expendable capable range. Approved TERF maneuver area

External Syllabus Support. FW aircraft to serve as an aggressor

### 2.13.6 Chemical, Biological, Radiological and Nuclear (CBRN)

Purpose. To conduct flight operations while wearing NBC protective equipment.

General. For the safe execution of initial CBRN flights, one pilot and one air crewman shall remain unmasked.

Crew Requirement. P/P/CC if done in the aircraft.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Chemical, Biological, Radiological and Nuclear stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Chemical, Biological, Radiological and Nuclear stage:

Academic: ACAD-4680

Flight: SFAM-2100 if conducted in the SIM, FAM-2103 if conducted in the aircraft

Designation/Qualification: H2P

**ACAD-4680    1.5    1095    B,R,M    G**

Goal. Completion of CBRN academic requirements.

Requirement. Complete all CBRN training modules.

Performance Standard. Per current evaluation criteria for CBRN training.

**SCBRN-4600    1.0    \*    B    (N)    S/A    1    CFTD/CH-53K**

Goal. Conduct flight in a simulated CBRN environment.

#### Requirements

##### Discuss:

CRM  
Comfort level  
Wearing of CBRN equipment in the aircraft  
Distortion of vision  
Communications  
Proper use of CBRN defensive equipment  
NS concerns with CBRN equipment

##### Introduce:

Taxi, low work, pattern work  
Confined area landings  
Communications

Performance Standards. Adequately taxi, hover, and fly while wearing CBRN gear. Communicate effectively while

wearing CBRN gear.

Instructor. NSI required if not NS qualified in light level event is conducted

Prerequisite. SFAM-2100 for sim, FAM-2103 for day, CAL-2220 for HLL, CAL-2230 for LLL

Range Requirements. CAL/MAL site, CFTD if conducted in the sim.

## 2.13.7 Field Carrier Landing Practice (FCLP)

Purpose. To qualify pilots in day and NS FCLP operations.

### General:

Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the Field Carrier Landing Practice and Carrier Qualification stage as described in the appropriate NATOPS Flight Manual, NAVMC 3500.14, NWP-42, LHA/LHD NATOPS, and CNAFINST 3710.7.

Each initial or refresher instructional flight requires a minimum of 5 FCLPs; additional FCLPs as required to demonstrate proficiency. Refer to CH-53K NATOPS, Shipboard Procedures.

Initial Night Systems Field Carrier Landing Practice training shall be accomplished under High Light Level conditions. Requalification and proficiency training may be accomplished under any light level condition.

FCLP-4710 and FCLP-4742 shall be conducted to a suitable FCLP pad.

Crew Requirement. FCLP-4700: P/P. FCLP-4710: P/P/CC. FCLP 4742 P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Field Carrier Landing Practice stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Field Carrier Landing Practice stage:

Academic: ACAD-4780

Flight: SFAM-2100

Designation/Qualification: H2P

<b>ACAD-4780</b>	<b>1.0</b>	<b>*</b>	<b>B</b>	<b>G</b>
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Goal. Completion of Introduction to Boat Operations academic requirements.

Requirement. Complete all Introduction to Boat Operations training modules.

Performance Standard. Per current evaluation criteria for Introduction to Boat Operations training.

<b>SFCLP-4700</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(N)</b>	<b>S</b>	<b>1</b>	<b>CFTD</b>
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Goal. Conduct day and NS simulated shipboard flight operations.

### Requirements

#### Discuss:

- CRM
- Terminology
- Shipboard day and night landing patterns
- Shipboard instrument procedures
- Shipboard emergency procedures
- Blade/pylon fold procedures

#### Introduce:

- The LHA and LHD day and night VFR landing patterns
- TACAN and CCA approaches in IMC or night conditions

Performance Standards. Conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. On initial event, pilot under instruction shall fly to this standard by the end of the flight

event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. SFAM-2100 and ACAD-4780

External Syllabus Support. CFTD

**FCLP-4710      1.5      365      B,R,M                      D      A      1              CH-53K**

Goal. Conduct day FCLP.

Requirements

Discuss: Same as FCLP-4700

Introduce: FCLPs

Review: FCLP-4700

Performance Standards. Conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat. Conduct a minimum of 2 landings for refresher qualification.

Prerequisite. CAL-2210 and FCLP-4700

Range Requirements. FCLP pad

External Syllabus Support. FCLP pad

**FCLP-4740      1.5      365      B,R,S,M                      NS      A      1              CH-53K**

Goal. Conduct NS FCLPs.

Requirements

Discuss:

Same as FCLP-4700  
NS landing techniques  
NS emergencies

Introduce:

NS FCLP

Performance Standards. Conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. On initial event, pilot under instruction shall fly to this standard by the end of the flight event. For subsequent logging, pilot shall fly these parameters on the majority of patterns flown. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat. Conduct a minimum of 2 landings for refresher qualification.

Prerequisites. FCLP-4710. If conducted under HLL conditions: CAL-2220. If conducted under LLL conditions: CAL-2230

Instructor. NSI required when not NS qualified in light level event is conducted

Range Requirements. FCLP pad

External Syllabus Support. FCLP pad

#### 2.13.8 Carrier Qualification (CQ)

Purpose. To qualify pilots for day and NS shipboard operations. The term "day carrier qualification" encompasses all shipboard day landing operations. The term "night systems carrier qualification encompasses all NVG shipboard landing operations.

General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the Carrier Qualification stage as described in the appropriate NATOPS Flight Manual, NAVMC 3500.14, NWP-42, LHA/LHD NATOPS, and CNAFINST 3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

5 day and 5 night FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53 NATOPS, Shipboard Procedures. Each initial or refresher instructional flight requires a minimum of 5 CQs; additional CQs as required to demonstrate proficiency. Initial day carrier qualification shall be made under ideal weather conditions to include a visible horizon.

At least 2 day shipboard landings must be made on the day of the night qualification. Initial Night Systems Carrier Qualification training shall be accomplished under HLL conditions. IAW the Aviation Program Manual, any requalification and proficiency training may be accomplished under any light level condition. CQ-4742 requires an NSI. Initial night carrier qualification shall be made under ideal weather conditions to include a visible horizon.

Crew Requirement. CQ-4711: P/P/CC. CQ-4742: P/P/CC/AG/O. For passenger and cargo operations, the crew requirement is P/P/CC/AG/O.

Academic Training. PUI should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and CNAFINST 3710.7 regarding shipboard operations.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Carrier Qualification stage:

Academic: ACAD-4781

Flight: 5 day FCLPs within 30 days prior to shipboard qualification. 5 night FCLPs within 30 days prior to shipboard qualification. For night qualification, at least 2 shipboard landings must be made on the day of the night qualification.

Designation/Qualification: H2P

**ACAD-4781      0.8      \*      B      G**

Goal. Completion of Shipboard Operations Planning academic requirements.

Requirement. Complete all Shipboard Operations Planning training modules.

Performance Standard. Per current evaluation criteria for Shipboard Operations Planning training.

**CQ-4711      1.5      365      B,R,S,M      D      A      1      CH-53K**

Goal. Introduce day CQs.

Requirements

Discuss:

- Standard CH-53 LHA/LHD landing pattern
- Shipboard operations brief
- CRM
- Comfort level
- Feet wet/landing checklist
- Closure rate
- Wind envelopes
- Aircraft lighting procedures
- Deck markings
- LSE signals
- Voice procedures/Lost communication procedures
- Shipboard landing patterns
- Shipboard holding patterns
- Shipboard instrument patterns
- Shipboard emergencies
- Air space control in the shipboard environment



Introduce: Day CQ

Performance Standards. Same as FCLP-4710.

Prerequisites. ACAD-4781,FCLP-4710.

External Syllabus Support. Helicopter capable ship.

**CQ-4742      1.0      365      B,R,S,M      NS      A      1      CH-53K**

Goal. Conduct NS CQs.

Requirements. Initial CQ-4742 shall be conducted under HLL conditions.

Discuss:

Same as CQ-4711  
Scan techniques  
NS aircraft/deck lighting  
NS landing techniques  
NS emergencies

Introduce: NS CQs.

Performance Standards. Same as FCLP-4740.

Instructor. Initial NVG CQs shall be flown with an NSI.

Prerequisites. 2920~HLL, FCLP-4740 and CQ-4711

External Syllabus Support. NS compatible helicopter capable ship

### 2.13.9 Night Unaided Carrier Qualification (Unaided CQ)

Purpose. To qualify pilots for unaided shipboard operations. The term “night unaided carrier qualification” encompasses all night unaided shipboard landing operations.

General. Discuss and become familiar with all aspects of unaided shipboard operations and CRM applicable to the Carrier Qualification stage as described in the appropriate NATOPS Flight Manual, NAVMC 3500.14, NWP-42, LHA/LHD NATOPS, and CNAFINST 3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

5 day FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53 NATOPS, Shipboard Procedures. Each initial or refresher instructional flight requires a minimum of 5 CQs; additional CQs as required to demonstrate proficiency.

At least 2 day shipboard landings must be made on the day of the night unaided qualification. Initial Night Unaided Carrier Qualification training shall be accomplished under High Light Level conditions. IAW the Aviation Program Manual, any requalification and proficiency training may be accomplished under any light level condition. CQ-4741 requires an NSI. Initial night unaided carrier qualification shall be made under ideal weather conditions to include a visible horizon.

Crew Requirement. CQ-4741: P/P/CC/AG/O

Academic Training. PUI should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and CNAFINST 3710.7 regarding shipboard operations.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Carrier Qualification stage:

Academic: N/A

Flight: 5 day FCLPs within 30 days prior to shipboard qualification. For night qualification, at least 2 day shipboard landings must be made on the day of the night qualification.

Designation/Qualification: H2P

**CQ-4741      1.0      365      B,M      N\*      A/S      1      CH-53/CFTD**

Goal. Conduct night unaided CQs.

Requirements. Initial CQ-4741 shall be conducted under HLL conditions.

Discuss:

- Standard CH-53 LHA/LHD landing pattern
- Shipboard operations brief
- TACAN and CCA approaches in IMC or night conditions
- Scan techniques for unaided shipboard operations
- Aircraft/deck lighting
- Unaided landing techniques
- Closure rate/ scan techniques
- Night unaided emergencies
- Spatial disorientation

Introduce: Night unaided CQs.

Performance Standards. Same as FCLP-4740.

Instructor. NSI required

Prerequisites. CQ-4711

External Syllabus Support. NS compatible helicopter capable ship or CFTD.

#### 2.13.10 Tactics (TAC)

Purpose. To conduct practical application exercises using skills developed throughout the syllabus. Pilots shall emphasize the integration of Marine aviation assets, threat and threat counter-tactics, and the C3 system. These exercises will include mission planning, briefing, and execution of an assault support mission in a simulated medium threat environment. The total number of aircraft, as specified, may be a dissimilar mix of aviation assets.

General. Pilots should use the ANTTP 3-22.3-CH53 and the ASTACSOP as a source document for planning. Pilots may conduct these flights in high to low threat level conditions, and/or at night if the participating pilots have completed the prerequisites.

Crew Requirements. P/P/CC/AG/O.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed in accordance with the Core Plus stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Core Plus Tactics stage:

Academic: ACAD-4990-4993

Flight: TAC-2911 Designation/Qualification: H2P

**ACAD-4990    1.0    \*    B    G**

Goal. Completion of CH-53K Airborne Command and Control academic requirements.

Requirement. Complete all CH-53K Airborne Command and Control training modules.

Performance Standard. Per current evaluation criteria for CH-53K Airborne Command and Control training.

**ACAD-4991    1.0    \*    B    G**

Goal. Completion of Air Assault Operations academic requirements.

Requirement. Complete all Air Assault Operations training modules.

Performance Standard. Per current evaluation criteria for Air Assault Operations training.

**ACAD-4992    1.0    \*    B    G**

Goal. Completion of MAGTF Targeting and Fire Support Planning academic requirements.

Requirement. Complete all MAGTF Targeting and Fire Support Planning training modules.

Performance Standard. Per current evaluation criteria for MAGTF Targeting and Fire Support Planning training.

**ACAD-4993    1.0    \*    B    G**

Goal. Completion of JCAS academic requirements.

Requirement. Complete all JCAS training modules.

Performance Standard. Per current evaluation criteria for JCAS training.

**TAC-4940    2.0    365    B,R,M    (NS)    A    3+    CH-53K**

Goal. Conduct division tactics in a low-to-medium threat environment.

Requirements

Discuss:

Same as TAC-2911, 2920, and 2930  
Division tactics  
Objective area analysis  
Threat analysis and counter-tactics  
Use of escort assets emphasizing responsibilities of air mission commander, assault flight leader, and escort flight leader

Introduce:

Division tactics  
Use escort assets emphasizing responsibilities of the air mission commander, assault flight leader, and escort flight leader

Performance Standards. Plan and brief a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW ASTACSOP magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible TERF navigation should be conducted for a minimum of 50 nm. Demonstrate proficiency with CH-53K FMS. Arrive in LZ within  $\pm$  30 sec of L-Hour and within 2 rotors of pre-briefed landing point.

Instructor. NSI required when not NS qualified in the light level event is conducted.

Prerequisites. TAC-2911, ACAD-4990-4993

Ordnance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53K T&R)

Range Requirements. Live fire AG range (.50 cal). CAL/MAL site. Approved TERF maneuver area/route

External Syllabus Support. Assault support escort aircraft if available.

**TAC-4941    2.0    365    B,R,M    (NS)    A    2    CH-53K**

Goal. Develop tactical flight proficiency in urban terrain operations.

Requirements

Discuss:

Effects of ambient lighting on NS in an urban area  
Urban navigation  
Targeting and fire support coordination in an urban area  
ROE  
METT-TC  
Urban obstacles and evasive maneuvering considerations  
ASE considerations  
Threat considerations in a three dimensional environment

Introduce:

Effects of ambient lighting on NS in an urban area  
Urban navigation  
Targeting and fire support coordination in an urban area

Performance Standards. Plan and brief a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW ASTACSOP magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible TERF navigation should be conducted for a minimum of 50 nm. Demonstrate proficiency with CH-53K FMS. Arrive in LZ within  $\pm$  30 sec of L-Hour and within 2 rotors of pre-briefed landing point.

Instructor. NSI required when not NS qualified in light level event is conducted

Prerequisites. TAC-2911 and ACAD-4990-4993

Range Requirements. CAL/MAL site in urban environment

External Syllabus Support. Assault support escort aircraft if available

<b>TAC-4942</b>	<b>4.0</b>	<b>365</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Conduct a long range mission in a low-to-medium threat environment utilizing HAAR, TFBDS, and/or FARP/ADGR.

#### Requirements

##### Discuss:

- Same as TAC-2911 and TAC-2930
- Refueling considerations
- Detailed fuel planning
- Escort/fire support coordination
- Utilization of TBFDS, FARP/RGR considerations
- Multiple tanker/receiver operations

##### Introduce:

- Detailed fuel planning
- Utilization of TBFDS, FARP/RGR considerations
- Multiple tanker/receiver operations if available

Performance Standards. Plan and brief a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW ASTACSOP Magellan criteria while navigating while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible TERF navigation should be conducted for a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ/DZ within  $\pm$  30 sec of L-Hour and within 2 rotors of pre-briefed landing point. Utilize fuel from external source (TBFDS may be used).

Instructor. NSI required when not NS qualified in light level event is conducted

Prerequisite. TAC-2911 and ACAD-4990-4993

Ordinance. Two .50 cal (TG and .50 Cal rounds optional)

Range Requirements. Live fire AG(.50 cal) approved and laser safe range. CAL/MAL site. Approved TERF maneuver area/route. Special use airspace for HAAR

External Syllabus Support. Assault support escort aircraft if available. KC-130 Tanker as required. AGS as required.

## 2.14 MISSION PLUS PHASE

Purpose. To plan, brief, and execute Mission Plus events in a low to medium threat environment.

General. For initial, refresher, or when the aircrew under instruction are not proficient in a particular Mission Plus event, training codes shall be given by an instructor pilot that is proficient in that Mission Plus event. Mission Plus events should be given to all those aircrew (Pilots, Crew Chief, AG/O) within the aircraft that meet the prerequisite. Additionally, for larger flights, any flight lead, (SL,DL,AFL,AMC) that is proficient in that Mission Plus event can give the Mission Plus code to all aircrew within the flight that meet the prerequisite.

It is the intent that all TACEX scenarios in the Mission and Mission Plus Phase be based on a minimum of one of the Mission tasks. If aircrew under instruction do not meet the prerequisite for the Mission Plus Phase event, they will not log the Mission Plus Phase event. However, the instructor of the Core or Core Plus TACEX will log

both the Core or Core Plus event and the Mission Plus event (EX: NSI logs a LLL-2930, CAT-3140, and RIE-4980). The PUI in the LLL syllabus logs a LLL-2930. Once aircrew have been designated NSQ-LLL, all subsequent TACEXs should be coded with the appropriate Core or Core Plus and Mission or Mission Plus code. Aircrew that are not proficient in a Core or Core Plus event may update both the Core or Core Plus and the Mission or Mission Plus event on the same sortie. Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL.

The aircrew under instruction will assist in the mission analysis, planning, briefing, execution and debriefing of each flight. Aircrew shall use the ANTTP series and NATOPS as source documents for planning, briefing, execution and debriefing.

Multiple Mission and Mission Plus training events may be logged per sortie (e.g. CAT-3140, AD-3240, AE-3440, RIE-4980,) as long as the requirement(s) is met for each event. Mission and Mission Plus training events are intended to be flown and logged in conjunction with other T&R syllabus events (e.g. for pilots: CAT-3140, AD-3240, AE-3440, RIE-4980, ADGR-4981, LLL-2930, EXT-2430, EXT-2440, EXT-2441 and LLL-2331). Initial attempts to complete Mission and Mission Plus should be made in the aircraft, subsequent attempts may be accomplished in the simulator.

The PUI will log the TAC code and the instructor will log both the TAC code and the Mission and/or Mission Plus event(s) that applies. Initial TAC codes shall be accomplished as a section, subsequent evolutions (when logged in conjunction with a Mission or Mission Plus event) may be done single ship, based on the tactical scenario. Mission Plus events shall be flown with operational ASE, .50 cal (as required for the tactical scenario) installed at a minimum (rounds and expendables optional), whenever practical.

As of the signing of this manual, the current HMM Core Plus MCTs are as follows:

- MCT 1.3.4.1.1 Conduct Airborne Rapid Insertion/Extraction (RIE)
- MCT 1.3.4.2.1 Provide Aviation-Delivered Ground Refueling (ADGR)
- MCT 1.3.3.3.1 Aviation Operations from Expeditionary Sea-Based Sites (SEA)

Stages. The following stages are included in the Mission Plus phase.

MISSION PLUS PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
RAPID INSERTION/ EXTRACTION (RIE)	2.15.1	2-105
AVIATION DELIVERED GROUND REFUELING (ADGR)	2.15.2	2-106
EXPEDITIONARY SEA-BASED OPERATIONS (SEA)	2.15.3	2-107

Crew Requirements. P/P/CC/AG/O.

Academic Training. Prior to commencement of each event within the Mission Plus Skill Phase, the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog. The Mission Plus academic/ground training shall be completed IAW the POI requirements and prerequisites. Upon completion, the PUI shall report to the PTO or designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Core Plus Tactics stage:

Academic: See event description  
Flight: LLL-2930  
Designation/Qualification: NSQ-LLL

## 2.15 MISSION PLUS STAGES

### 2.15.1 Rapid Insertion Extraction (RIE)

**RIE-4980      2.0      365      B,R,M      (N)      A/S      1+      CH-53K/CFTD**

Goal. Demonstrate the ability to conduct tactical airborne rapid insertion/extraction operations in a low to medium threat environment. Helicopter Rope Suspension Techniques (HRST) provides Marines with the ability to conduct

insertions and extractions where landings are impractical. Airborne rapid insertion/extraction includes methods such as rappelling, fast rope, special patrol insertion and extractions, etc. (MCWP 3-2, MCTP 3-01B, MCTP 3-20E, MCRP 3-01B.1). A landing to the X, Y, or Offset may be used for the insert and/or extract if tactical considerations dictate that a landing would be most appropriate.

#### Requirements

##### Discuss:

Same as TAC-2930

##### Introduce:

Conduct a rapid insertion/extraction operation

Performance Standard. Plan, brief and execute a tactical airborne rapid insertion/extraction mission. If an L-Hour is utilized arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Execute an approach and hover within +/- 5' of intended altitude and/or land within 10' of intended spot and/or fly with +/- 50' of designated altitude and +/- 5 kts of designated airspeed.

Instructor. NSI required when not NS qualified in the light level event is conducted

Prerequisite. NSQ LLL and ACAD-4991-4993. Proficiency in HIE-4110 if helocast TTPs are employed, HIE-4140 if SPIE, fast rope or rappelling TTPs are employed, or HIE-4141 if paraops TTPs are employed

Ordnance. Two .50 cal (TG and rounds per weapon are optional)

Range Requirement. Suitable CAL/MAL site

External Syllabus Support. HRST Master and ground safety personnel, if applicable

#### 2.15.2 Aviation Delivered Ground Refueling (ADGR)

**ACAD-4994    1.0    \*    B    G**

Goal. Completion of ADGR academic requirements.

Requirement. Complete all ADGR training modules.

Performance Standard. Per current evaluation criteria for ADGR training.

**ADGR-4981    2.0    365    B,R,M    (N)    A    1+    CH-53K**

Goal. Demonstrate the ability to provide aviation-delivered ground refueling to combat aircraft or tactical vehicles in a low to medium threat environment. Aviation-delivered ground refueling is a method of providing fuel to aircraft and tactical ground vehicles (TGV) utilizing CH-53K aircraft in austere locations, where no other source of fuel is readily available. This method of refueling permits operation of fixed- and rotary-wing aircraft and TGV without the requirement to commit the significant logistical assets necessary to operate helicopter expeditionary refueling systems (HERS), or tactical airfield fuel dispensing systems (TAFDS). ADGR can also quickly resupply established forward-arming and refueling (FARP) sites and forward-operating bases (FOB). The capability of the CH-53K to operate as a tactical ground refueler enhances MAGTF operations. (ANTTP 3-22.3-KC-130)

#### Requirements

##### Discuss:

TBFDS capabilities and considerations  
Fuel delivery from auxiliary fuel tanks to receiver assets  
LZ Markings  
Arm/De-Arm procedures and ordnance considerations  
Site security  
Aircraft sequencing and airspace considerations

Performance Standard. Plan and brief a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW ASTACSOP Magellan criteria. Arrive in LZ within +/- 30 sec of L-Hour and within 2 rotors of prebriefed landing point and or lead aircraft. Plan, brief and execute a tactical TBFDS refueling evolution. Calculate accurate fuel requirements; ensure aircraft integration and FARP site security.

Instructor. NSI required when not NS qualified in the light level event is conducted.

Prerequisite. NSQ LLL and ACAD-4994

Ordnance. Two .50 cal (TG and 500 rounds per weapon are optional)

Range Requirement. Live fire range as required

External Syllabus Support. TBFDs system, escort, MMT and/or Command and Control aircraft are optional

### 2.15.3 Expeditionary Sea-Based Operations (SEA)

**SEA-4982      2.0      365      B,R,M      (N)      A/S      1+      CH-53K**

Goal. Demonstrate the capability to operate from Sea based sites. Marine aviation units maintain the capability to operate from naval shipping (amphibious platforms, carriers, ect.) in line with platform and unit capabilities. (JP 3-0, MCWP 3-20).

#### Requirements

##### Discuss:

Same as CQ-4742  
Deck cycle  
Combat Cargo/troop loading considerations while in shipboard environments  
Airspace considerations  
IFF procedures

Performance Standard. Plan and brief and execute a tactical mission to or from a sea based site or FCLP pad. Ensure aircrew properly plans for and demonstrates knowledge of the particulars of operating in the shipboard environment.

Instructor. NSI required when not NS qualified in the light level event is conducted.

Prerequisite. NSQ LLL and appropriate CQ/FCLP event.

Ordnance. Two .50 cal (TG and 500 rounds per weapon are optional)

Range Requirement. Live fire range as required

External Syllabus Support. Ship or FCLP pad as required.

### 2.16 INSTRUCTOR TRAINING PHASE

Purpose. This phase contains instructor workup and evaluations certification syllabus events.

General. Upon the successful completion of the check flight, the instructor will be designated in writing by the squadron Commanding Officer. Copies of the designation or qualification shall be placed in the APR and NATOPS.

Stages. The following stages are included in the Instructor Training phase.

INSTRUCTOR PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.17.1	2-108
BASIC INSTRUCTOR PILOT (BIP)	2.17.2	2-108
TERRAIN FLIGHT INSTRUCTOR (TERFI)	2.17.3	2-111
AERIAL REFUELING INSTRUCTOR (ARI)	2.17.4	2-111
TACTICAL SIMULATOR INSTRUCTOR (TSI)	2.17.5	2-111
FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI)	2.17.6	2-112
CORE SKILL INTRODUCTORY INSTRUCTOR (CSII)	2.17.7	2-115
ADVANCED INSTRUCTOR DESIGNATIONS	2.17.8	2-115
FLIGHT LEADERSHIP STANDARDIZATION EVALUATOR (FLSE)	2.17.9	2-116
CONTRACT INSTRUCTOR (CI)	2.17.10	2-116

## 2.17 INSTRUCTOR TRAINING STAGES

### 2.17.1 Academic/Ground Training

**Purpose.** Within this phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog. The Instructor Training Phase academic/ground training shall be complete IAW the POI requirements and prerequisites for the stage. Upon completion, the PUI shall report to the PTO or designated representative(s), who will then manually update the training code in MSHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

NIPR 2000-6000 classes will be located at the MAWTS-1 NIPR website under ASD, CH-53K, T&R:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes will be located at the MAWTS-1 SIPR website under ASD, CH-53K, T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

**Prerequisites.** The following events/designations are prerequisites prior to the commencement of the Instructor Training Phase.

Academic: See event

Flight: Core and Mission Skill complete

Designation/Qualification: NSQ LLL

### 2.17.2 Basic Instructor Pilot (BIP)

**Purpose.** To develop qualified instructor pilots for single ship or wingman events in the day familiarization, instrument, CAL, or external syllabus.

**General.** In order to begin the BIP syllabus, a pilot must be recommended by the Standardization Board (in conjunction with a recommendation for HAC), have a minimum of 450 hours, be core and mission skill complete, and demonstrate the maturity, judgment, and discipline required of a pilot serving in an instructor role.

The BIP syllabus can be completed in conjunction with the HAC syllabus. All BIP instructional flights shall be conducted by a section leader or higher. BIP events may be combined with each other or another training event. Upon successful completion of SBIP 5101 and HAC-6122, the Squadron commanding officer will designate the PUI a BIP. A designation letter signed by the Squadron commanding officer stating that the pilot is a qualified BIP shall be placed in the pilot's NATOPS jacket and a copy in the pilot's APR with a corresponding logbook entry.

Previously designated BIPs may attain re-designation by the Squadron commanding officer, at his/her discretion, upon successful completion of HAC-6122/NATOPS-6100 (NATOPS check specifying they are aircraft commanders and BIPs). NATOPS-6100 should emphasize instructional techniques for all HACs and above.

If a designated BIP loses proficiency in any of the prerequisite events listed in paragraph (e), he/she may not instruct in that event until he/she regains proficiency.

#### Crew Requirements

SBIP-5100 P/P

SBIP-5101 P/P

BIP-5110 P/P/CC/AG/O

**Academic Training.** The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed prior to starting the Basic Instructor Pilot stage.

**Prerequisites.** The following events/designations are prerequisites prior to the commencement of the Basic Instructor Pilot stage:

Academic: 5180

Flight: Core and Mission Skill complete

Designation/Qualification: NSQ-LLL

<b>SBIP-5100</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S/A</b>	<b>1+</b>	<b>CFTD/CH-53K</b>
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Goal. Introduce general instructional techniques for FAM, CAL, and INST events.

Requirements

Discuss:

Instructor role during initial syllabus events.  
Syllabus event performance standards.  
Role of instructor when a student does not meet the performance standard  
Instructor EATF writing responsibilities.  
Proper EATF writing.  
Instructor SA vs student SA  
Instructor comfort level and when to intervene during student performed maneuvers.  
CRM during T&R syllabus events.  
Effective instruction vs non effective instruction  
Preflight and post-flight pilot briefings.  
Cockpit procedures during initial syllabus events.  
Breaking down the mechanics of an approach as an instructor.  
Simulated emergency procedures during initial events.  
Actual emergency procedures during initial syllabus events.  
IFR planning.  
Local course rules.  
Squadron, Group, Wing, and/or MEU SOPs.  
Techniques of instruction.

Introduce:

Techniques of instruction during FAM, CAL and INST maneuvers.  
Breaking down the mechanics of an approach as an instructor.  
Instrument procedures with emphasis on instruction.  
Attitude instrument flight.  
Recovery from unusual attitudes as an instructor.  
Techniques of instruction during Precision and non-precision approaches.  
Techniques of instruction for use of OEI and max gross weight training mode.

Performance Standards. BIP(UI) will conform to instructional techniques set forth by the squadron Standardization Board and/or applicable SOPs/directives. BIP(UI) will be prepared to discuss the seven critical skills of CRM as applicable to each event. BIP(UI) shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point. BIP(UI) shall conduct one of each familiarization maneuver with emphasis on instructional techniques. Conduct a minimum of 5 landings which shall consist of a precision approach, a normal approach, a hover and a no hover landing, and a max gross weight takeoff and landing. Simulated high GW takeoffs and landings power shall be limited to 5 percent above 10' hover power. Maintain safe obstacle clearance. All of the above should be done while emphasizing instructional techniques during the conduct of each maneuver.

Prerequisites. NSQ-LLL, Core/Mission Skill complete, ACAD-5180

External Syllabus Support. CFTD if conducted in the sim

<b>SBIP-5101</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S/A</b>	<b>1+</b>	<b>CFTD/CH-53K</b>
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Goal. Introduce general instructional techniques for EXT and CQ events.

Requirements

Discuss:

CRM during initial EXT and CQ events.  
Comfort level during externals.  
Instructor ATF writing responsibilities.  
Proper ATF writing.  
Instructor SA vs student SA  
Single and dual point operations with emphasis on instructional techniques.  
Preflight load computations and in-zone power computations.  
Simulated emergency procedures during EXT and CQ events.

Instructor comfort level and when to intervene during student performed maneuvers.  
Actual emergency procedures during EXT and CQ events  
Aircraft EXT and CQ limitations.  
Feet wet/landing checklist.  
Closure rate with the ship.  
Wind envelopes.  
Aircraft lighting procedures.  
Deck markings.  
LSE signals.  
Voice procedures/Lost communication procedures.  
Shipboard landing patterns.  
Shipboard holding patterns.  
Shipboard instrument patterns.  
Shipboard emergencies.  
Airspace control in the shipboard environment.  
Techniques of instruction WRT to movement around the ship.

Introduce:

External operations with emphasis on instructional techniques.  
Breaking down the mechanics of a precision hover, pick-up and delivery of an external load.  
Day CQ with emphasis on instructional techniques.  
Apply instructional technique using the Mission Load page and Hover override page

Review:

Any previously introduced maneuvers as necessary.

Performance Standards. BIP(UI) will conform to instructional techniques set forth by the squadron Standardization Board and/or applicable SOPs/directives. BIP(UI) will be prepared to discuss the seven critical skills of CRM as applicable to each event. For external operations, BIP(UI) shall execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading while emphasizing instructional techniques. For shipboard operations, BIP(UI) shall conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC. Fly pattern within 50' and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings.

Prerequisites. SBIP-5100

External Syllabus Support. CFTD if conducted in the sim

<b>BIP-5110</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(N)</b>	<b>A</b>	<b>1+</b>	<b>CH-53K</b>
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Goal. Introduce techniques of instruction for day FAM, CAL and INST events. The focus should be on instructional techniques and performance deviation recognition and analysis.

Requirements

Discuss:

Same as 5100  
Local course rules

Introduce:

Same as SBIP-5100

Review:

Same as SBIP-5100

Performance Standards. Same as SBIP5100

Prerequisites. SBIP-5101

### 2.17.3 Terrain Flight Instructor (TERFI)

Purpose. To develop qualified instructor pilots for day terrain flight. The MAWTS-1 Course Catalog contains the POIs and the appropriate training codes for TERFI. The community considers the TERF stage of the T&R syllabus sufficient to maintain proficiency as an instructor.

TERF-5200-5202: Refer to MAWTS-1 CH-53 Course Catalog.

### 2.17.4 Aerial Refueling Instructor (ARI)

Purpose. To develop qualified instructor pilots for HAAR events using a standardized flight training program. The MAWTS-1 Course Catalog contains the POIs and the appropriate training codes for ARI. The community considers the HAAR stage of the T&R syllabus sufficient to maintain proficiency as an instructor.

### 2.17.5 Tactical Simulator Instructor (TSI)

Purpose. To qualify the IUT as a TSI capable of providing tactical simulation training in the CH-53K CFTD.

General. IUT shall be in the BIP syllabus prior to beginning TSI training and shall be designated a HAC prior to designation as a TSI.

The TSI is qualified to instruct all phases of flight simulation except those requiring NI, ANI, NII, AIR, NSI, DMI or WTI designations. The TSI shall demonstrate sound knowledge of all aircraft weapon systems, threat systems and current tactics, techniques and procedures.

The IUT will assist in developing, controlling and instructing tactical simulator events designed to meet the performance requirements of the Core Skills Phase, Mission Skills Phase and Core Plus/Mission Plus Skills Phase simulator events.

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

Prerequisites. IUT must be in the BIP syllabus prior to beginning TSI stage.

**STSI-5410      1.0      \*      B,S      (NS)      S      1      CFTD**

Goal. Simulator control position; Introduce simulator control functions and capabilities.

#### Requirements

##### Discuss:

- Leaving Objectives
- Performance standards
- M-SHARP simulator logging
- Basic simulator functions (motion, communication, etc.)
- Simulator MAF submission
- Instructor role during initial syllabus events

##### Demonstrate/Introduce:

- Environment/weather conditions
- ASE configuration
- Systems malfunctions
- Threat systems incorporation and capabilities
- Friendly system incorporation and capabilities
- Instrument/approach functions
- Shipboard configuration and functions
- Effective vs non-effective instruction
- Simulated emergency procedures

Performance Standards. IUT shall demonstrate the ability to operate the simulator basic flight, shipboard configurations and adjust environmental conditions and threat conditions

Prerequisites. ACAD-5180 and SBIP-5100

Crew. CSI or TSI/IUT

**STSI-5411      1.0      \*      B,S      (NS)      S      1      CFTD**

Goal. Simulator control position; Review simulator control functions, capabilities and scenario development.

Requirements

Discuss:

Advanced simulation scenario development (METT-TC)  
Instructor techniques  
Simulator set-up  
Instructor briefing and debriefing techniques

Demonstrate/Introduce:

TEN+ employment

Review:

Environment/weather conditions  
ASE configurations  
Systems malfunctions  
Threat systems incorporation and capabilities  
Friendly system incorporation and capabilities  
Instrument/approach functions  
Shipboard configuration and functions  
Effective vs non-effective instruction  
Simulated emergency procedures

Performance Standards. IUT shall develop, brief and execute a low to medium threat tactical scenario from the control position. The IP will act as the PUI and will fly in support of the IUT's training. IUT shall select and control friendly systems and enemy threat systems.

Prerequisites. STSI-5410

Crew. TSI/IUT. MATSS TSI preferred.

2.17.6 FRS Instructor Training (FRSI-E)

Purpose. To develop qualified instructor pilots for events using a standardized flight training program.

General. Fly IUT flights with a designated FRS Instructor Pilot. Pilots undergoing instructor training should fly in the right seat. All IUTs should complete every event of the IUT training syllabus.

Training Objectives. All IUT flights emphasize instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis on all flights is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the Pilot will be designated an Instructor Pilot (IP) and is qualified to instruct all day and night unaided Core Skill Introduction events.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the FRS instructor stage:

Designation/Qualification: Section Leader, TERFI.

The following requirements are prerequisites for designation as an FRSI:

Academic: FRSI ground phase

Flight: Jump seat review

Designation/Qualification: Section Lead, TERFI.

**FRSI-E-5500      1.5      \*      B      D      A      1      CH-53K**

Goal. Introduce the IP brief and demonstrate standardized procedures for flight planning, preflight, and all day

FAM stage maneuvers.

Requirements

Discuss:

CRM  
Preflight and postflight pilot briefings  
Cockpit procedures  
Techniques of instruction  
Local course rules

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction.

Prerequisite. TERF-5202 and SL-6203

**SFRSI-E-5501 2.0 \* B D S 1 CFTD**

Goal. Conduct initial simulator training of Replacement Aircrew (RAC) in familiarization, formation, terrain flight and/or external stage events under supervision of a designated FRSI, integrating concepts of CRM..

Requirements: FRSI-UT will, under instruction of a designated FRSI (CRMI as appropriate), plan/brief and conduct a 1000-level simulator event with a RAC in order to establish baseline expectations of general RAC capabilities and tendencies as well as develop introductory-level instructional techniques. FRSI-UT should also conduct CRM Flight evaluation in performing required mission tasks under supervision of the CRMI.

Discuss:

CRM  
Instructional techniques  
Instructor and RAC comfort levels  
RAC common tendencies  
Applicable discussion items for RAC's T&R event

Demonstrate:

Instructional Techniques during the application of specific in-flight skills and maneuvers  
CRM integration, demonstrating critical skills as applied to specific missions set(s)

Instructor Requirements: FRSI, CRMI as applicable

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. FRSI-5500

**SFRSI-E-5502 2.0 \* B (N) S/A 1 CFTD/CH-53K**

Goal. Review basic instrument maneuvers, IFR planning, filing, and airway procedures.

Requirements

Discuss:

CRM  
IFR planning  
Filing a DD-175  
Airway procedures  
Precision/non-precision approaches

Review:

Instrument checklist.  
Attitude instrument flight.  
Standard rate climbing and descending turns.  
Recovery from unusual attitudes.  
Vertical S-1 pattern.  
Oscar pattern.  
Precision and non-precision approaches.

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisite. TERF-5202 and SL-6203

External Syllabus Support. CFTD if conducted in the sim

<b>FRSI-E-5503</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Review CAL instruction techniques.

Requirements

Discuss:

CRM  
Comfort level

Review:

All CAL stage maneuvers

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Range Requirements. CAL/MAL site.

Prerequisites. FRSI-5500

<b>FRSI-E-5504</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>2</b>	<b>CH-53K</b>
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Goal. Review formation instructional techniques and formation stage maneuvers emphasizing closure rates and radius of turn.

Requirements

Discuss:

Loss of visual contact  
Parade position  
Cruise turn principles  
Section CALs principles

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. FRSI-5500

<b>FRSI-E-5505</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Review external operation instructional techniques.

Requirements

Discuss:

CRM  
Single , dual and independent hook operations  
Load computations, preflight and in-flight  
Emergency procedures  
Aircraft limitations

Review:

Single, dual and independent hook operations.

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide. Execute 2 pickups in PFCS, 2 pickups in AFCS, and 1 pickup using PHLD or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery while maintaining +/- 10 degrees of assigned heading without using PHLD or flight director augmentation.

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST, single point loads

Prerequisites. FRSI-5500

**FRSI-E-5506    1.5    \*    B,R    (N)    A    1    CH-53K**

Goal. Flight instructor standardization check.

Requirements

Discuss:

CRM  
CH-53K limitations  
Course Rules  
Maneuver Description Guide  
Instruction techniques

Demonstrate:

Ability to execute and instruct Maneuver Description Guide items

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. FRSI-5500 through FRSI-5505

**2.17.7    Core Skill Introductory Instructor Training (CSII)**

Purpose. To develop qualified instructor pilots for events using a standardized flight training program.

General. Conduct an IUT check-ride in the aircraft or simulator. IUTs must be proposed based on flight leadership experience, qualifications, and designations in the same manner as a FLSE is selected.

Training Objectives. IUT flight emphasizes instructional techniques, briefing, and debriefing. The IUT will be capable of demonstrating all training objectives listed for the referenced syllabus flight. Emphasis is on training objectives, method of instruction, and student problem areas. At the completion of this stage of training, the Pilot will be designated an Instructor Pilot (IP) and is qualified to instruct all day and night Core Skill Introduction refresher and series conversion events.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the CSII instructor stage:

Academic: N/A

Flight: N/A

Designation/Qualification: Section Lead, Night Systems Instructor.

**CSII-5509    1.0    \*    B,R,S    (N)    A/S    1    CH-53K/CFTD**

Goal. Flight instructor standardization check.

Requirements

Discuss:

CRM  
CH-53K limitations  
Course Rules  
Maneuver Description Guide  
Instruction techniques

Demonstrate:

Ability to execute and instruct Maneuver Description Guide items

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. Section Lead, NSI

**2.17.8    Advanced Instructor Designations**

General. There are 4 graduate level courses that qualify instructors for specific portions of the T&R syllabus. These courses are as follows:

NS Familiarization Instructor (NSFI).  
Defensive Measures Instructor (DMI).  
NS Instructor (NSI).  
Weapons and Tactics Instructor (WTI).

The MAWTS-1 Course Catalog contains the POIs and the appropriate training codes, in addition to the POIs and training codes for TERFI and ARI. Additionally, the WTI course catalog contains the POI for a WTI. The community considers each particular stage of the T&R syllabus sufficient to maintain proficiency as an instructor.

NSFI-5600-5603: Refer to MAWTS-1 CH-53 Course Catalog.

DMI-5700-5702: Refer to MAWTS-1 CH-53 Course Catalog.

NSI-5800-5805: Refer to MAWTS-1 CH-53 Course Catalog.

WTI: Refer to MAWTS-1 WTI Course Catalog.

#### 2.17.9 Flight Leadership Standardization Evaluator (FLSE)

Purpose. To designate qualified pilots as Flight Leadership Standardization Evaluators (FLSE) in accordance with the T&R Program Manual. The MAWTS-1 FLSE Program Guide and individual T/M/S Course Catalogs contain the POI and the appropriate training codes in the FLSE syllabus.

#### 2.17.10 Contract Instructor Training Stage (CIUT)

Purpose. To develop qualified contract instructor (CI) pilots for core skill introduction (1000 phase) day events using a standardized flight training program.

General. The below requirements shall not supersede any current contracts or legal agreements. However, this document shall be adhered to for the development and establishment of new contracts as of the signing of this manual. CIs shall have at least 1000 hours total pilot time and, at a minimum, hold prior designation of aircraft commander in an H-53. 1000-level S, S/A, or A/S flights may be flown under the instruction of a designated CI. 5000-level CIUT flights shall be flown in the simulator under the instruction of a designated Standardization Pilot. CIUTs should fly in the right seat. Every event in the CIUT training syllabus shall be completed prior to designation as a CI. While it is preferred that all CIs be qualified CRMIs, at a minimum all CIUTs shall be designated CRM(F) prior to designation as a CI. All CIUTs shall complete an Instrument Evaluation, to include all prerequisites in accordance with CNAF 3710.7 and the NATOPS Instrument POI, prior to designation as a CI.

All CIUT flights shall emphasize instructional techniques, briefing and debriefing, training objectives, methods of instruction, current TTPs and common student errors. The CIUT will be capable of demonstrating all training objectives listed in the T&R for the applicable syllabus flight. At the completion of this stage of training, the CIUT will be designated a Contract Instructor Pilot (CI) by the MATSS OIC and is qualified to instruct day Core Skill Introduction (1000) level simulator events only. All initial 2000-6000 level simulated events require a uniformed IP.

#### Annual requirements:

CRM ground class.

Instrument minimums and requirements (all requirements able to be met in simulator) in accordance with CNAF 3710.7 and the NATOPS Instrument POI, to include an instrument evaluation given by a uniformed NATOPS Instrument Evaluator or Instructor.

Open and closed book NATOPS tests.

Annual NATOPS evaluation given by a uniformed NATOPS Evaluator or Assistant NATOPS Instructor in accordance with the NATOPS POI.

Crew Requirement. IP/CIUT.

Academic/Ground Training. CBT 0001-0028, ACAD 0100-0134.

<b>CIUT-5900</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FAM 1108

Requirement.



Same as FAM 1108s

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisites. CBT and ACAD complete

External Syllabus Support. CFTD

<b>CIUT-5901</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as SFAM 1101

Requirement.

Same as SFAM 1101

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5900

External Syllabus Support. CFTD

<b>CIUT-5902</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as SFAM 1104

Requirement.

Same as SFAM 1104

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisites. CIUT-5901

External Syllabus Support. CFTD

<b>CIUT-5903</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as SFAM 1105

Requirement.

Same as SFAM 1105

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5902

External Syllabus Support. CFTD

<b>CIUT-5904</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as SFAM 1106

Requirement.

Same as SFAM 1106

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5903

External Syllabus Support. CFTD

<b>CIUT-5905</b>	<b>1.5</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as SFAM 1107

Requirement.

Same as SFAM 1107

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5904

External Syllabus Support. CFTD

<b>CIUT-5906</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FAM 1109

Requirement.

Same as FAM 1109

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5905

External Syllabus Support. CFTD

<b>CIUT-5907</b>	<b>1.5</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FAM 1111

Requirement.

Same as FAM 1111

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide.

Prerequisites. CIUT-5906

External Syllabus Support. CFTD

<b>CIUT-5908</b>	<b>1.5</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FAM 1112

Requirement.

Same as FAM 1112

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5907

External Syllabus Support. CFTD

<b>CIUT-5909</b>	<b>2.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FAM 1116

Requirement.

Same as FAM 1116

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5908

External Syllabus Support. CFTD

<b>CIUT-5910</b>	<b>1.5</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FAM 1202

Requirement.

Same as FAM 1202

Performance Standards. IAW CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5909

External Syllabus Support. CFTD

**CIUT-5911      1.5      \*      CIUT      D      S      1 CFTD**

Goal. Same as SINST 1300

Requirement.

Same as SINST 1300

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5910

External Syllabus Support. CFTD

**CIUT-5912      1.5      \*      CIUT      D      S      1 CFTD**

Goal. Same as SINST 1302

Requirement.

Same as SINST 1302

Performance Standards. IAW CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide.

Prerequisites. CIUT-5911

External Syllabus Support. CFTD

**CIUT-5913      1.0      \*      CIUT      D      S      1 CFTD**

Goal. Same as INST 1306

Requirement.

Same as INST 1306

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. CIUT-5912

External Syllabus Support. CFTD

**CIUT-5914      1.0      \*      CIUT      D      S      1 CFTD**

Goal. Same as SNAV 1401

Requirement.

Same as SNAV 1401

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. CIUT-5913

External Syllabus Support. CFTD

**CIUT-5915      1.0      \*      CIUT      D      S      1 CFTD**

Goal. Same as FORM 1501

Requirement.

Same as FORM 1501

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide.

Prerequisites. CIUT-5914

External Syllabus Support. CFTD

<b>CIUT-5916</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>N</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as FORM 1503

Requirement.

Same as FORM 1503

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and FRS Maneuver Description Guide.

Prerequisites. CIUT-5915

External Syllabus Support. CFTD

<b>CIUT-5917</b>	<b>2.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as CAL 1603

Requirement.

Same as CAL 1603

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide.

Prerequisites. CIUT-5916

External Syllabus Support. CFTD

<b>CIUT-5918</b>	<b>1.5</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as CAL 1604

Requirement.

Same as CAL 1604

Performance Standards. Per CH-53K NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide

Prerequisites. CIUT-5917

External Syllabus Support. CFTD

<b>CIUT-5919</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Same as CAL 1608

Requirement.

Same as CAL 1608

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. CIUTD-5918

External Syllabus Support. CFTD

**CIUT-5920      1.5      \*      CIUT                      D      S      1 CFTD**

Goal. Same as EXT 1702

Requirement.

Same as EXT 1702

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. CIUTD-5919

External Syllabus Support. CFTD

**CIUT-5921      1.0      \*      CIUT                      N      S      1 CFTD**

Goal. Same as EXT 1704

Requirement.

Same as EXT 1704

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisites. CIUT-5920

External Syllabus Support. CFTD

**CIUT-5922      1.0      \*      CIUT                      D      S      1 CFTD**

Goal. Same as TERF 1801

Requirement.

Same as TERF 1801

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. CIUT-5921

External Syllabus Support. CFTD

**CIUT-5923      1.0      \*      CIUT                      D      S      1 CFTD**

Goal. Review Core Skill Introduction training.

Requirement.

Practice:

All FAM stage maneuvers  
Instrument stage maneuvers  
Confined area landings  
External cargo procedures  
If possible, formation flight

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide. CIUT is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. CIUT-5922

External Syllabus Support. CFTD

**CIUT-5925      1.0      \*      CIUT                      D      S      1 CFTD**

Goal. Evaluate systems knowledge of the CH-53K and the capability to perform maneuvers in the Core Skill Introduction phase, including high AOB maneuvers.

Requirement.

Practice:

Evaluate systems knowledge of the CH-53K to include external lift systems  
Brief and demonstrate proficiency of all aircraft emergency procedures per the CH-53K NATOPS Flight Manual  
Demonstrate proficiency and the capability to perform in the Core Skill Introduction to include takeoffs, approaches, instrument procedures, emergency procedures, CALs, high AOB maneuvers, and landings

Performance Standards. Per CH-53K NATOPS and Maneuver Description Guide

Prerequisite. Open and Closed book NATOPS exams; CIUT-5923

External Syllabus Support. CFTD

<b>CIUT-5931</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Introduce the IP brief and demonstrate standardized procedures for flight planning, preflight, and all day FAM stage maneuvers.

Requirement.

Discuss:

CRM  
Preflight and postflight pilot briefings  
Cockpit procedures  
Techniques of instruction  
Local course rules

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction.

Prerequisites. CIUT-5925

External Syllabus Support. CFTD

<b>CIUT-5932</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Review all familiarization stage maneuvers at night.

Requirement.

Discuss:

CRM  
The night unaided environment

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide. IUT will perform all night familiarization stage maneuvers with emphasis on the IUT's instructional technique. Instructors shall emphasize the ability to teach, evaluate problems, and apply corrective instruction of FAM maneuvers in the unaided night environment.

Prerequisites. CIUT-5931

External Syllabus Support. CFTD

<b>CIUT-5933</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Review basic instrument maneuvers, IFR planning, filing, and airway procedures.

Requirement.

Discuss:

CRM  
IFR planning

Filing a DD-175  
Airway procedures  
Precision/non-precision approaches

Review:

Instrument checklist  
Attitude instrument flight  
Standard rate climbing and descending turns  
Recovery from unusual attitudes  
Vertical S-1 pattern  
Oscar pattern  
Precision and non-precision approaches

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. CIUT-5932

External Syllabus Support. CFTD

<b>CIUT-5934</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Review CAL instruction techniques.

Requirement.

Discuss:

CRM  
Comfort level

Review:

All CAL stage maneuvers

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. CIUT-5933

External Syllabus Support. CFTD

<b>CIUT-5935</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Review formation instructional techniques and formation stage maneuvers emphasizing closure rates and radius of turn.

Requirement.

Discuss:

Loss of visual contact  
Parade position  
Cruise turn principles  
Section CALs principles

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. CIUT-5934

External Syllabus Support. CFTD

<b>CIUT-5936</b>	<b>1.0</b>	<b>*</b>	<b>CIUT</b>	<b>D</b>	<b>S</b>	<b>1 CFTD</b>
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Goal. Review external operation instructional techniques.

Requirement.

Discuss:

CRM  
Single and dual point operations

Load computations, preflight and in-flight  
Emergency procedures  
Aircraft limitations

Review:

Single and dual point operations

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide. Execute five pickups and deliveries or demonstrate proficiency as defined by the ability to fly within 50' and 10 kts of briefed altitude and airspeed, and deliver load within 5 meters of intended point of delivery and +/- 10 degrees of assigned heading.

Prerequisites. CIUT-5935

External Syllabus Support. CFTD with external aircrew trainer

**CIUT-5937    1.0    \*    CIUT    D    S    1 CFTD**

Goal. Flight instructor standardization check.

Requirement.

Discuss:

CRM  
CH-53K limitations  
Course Rules  
FRS Maneuver Description Guide  
Instruction techniques

Performance Standards. Per CH-53K NATOPS and FRS Maneuver Description Guide

Prerequisites. Open and Closed Book NATOPS; CIUT-5936

External Syllabus Support. CFTD

## 2.18 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) PHASE

Purpose. This phase contains standardized combat/leadership workup and evaluation events.

General. Squadrons should use this phase of training for check flights and designations. The PUI will demonstrate sound levels of aircraft/flight leadership and judgment required in a combat environment.

Squadrons shall evaluate pilots for required flight leadership designations at the discretion of the squadron commanding officer per the criteria in the CH53 NATOPS Flight Manual, CNAF 3710, and local SOPs.

Upon the successful completion of the check flight, the new Helicopter Aircraft Commander, Section/Division/Flight Leader, or Air Mission Commander will be designated in writing by the squadron commanding officer. Copies of the designation shall be placed in the APR and NATOPS.

Flight leadership codes do not chain other syllabus events. Log appropriate T&R syllabus events in addition to flight leadership codes. Range, ordnance, and external support will be IAW the appropriate T&R syllabus events.

Flight leadership re-designation criteria for pilots that did not require Core Skill Introduction Refresher training is at the discretion of the Squadron Commanding Officer, upon regaining core and mission skill proficiency and a NATOPS-6100. Pilots that required Core Skill Introduction Refresher shall complete those flight leadership events designated as R POI events and be re-designated at the discretion of the Squadron commander. Refresher pilots that were previous Flight Leaders (FL) and Air Mission Commanders (AMC) may be re-designated with their highest previous flight leadership designation, following successful completion of the R coded HAC, Section lead and Division lead events.

Upon completion of the HAC syllabus, model conversions may be re-designated with their highest previous flight leadership designation at the discretion of the Squadron Commanding Officer, assuming they have not been out of the cockpit for more than 485 days prior to converting. If the model conversion has been out of the cockpit 485 days or greater, they must complete the R coded flight leadership events for their previous flight leadership



designations up to Division lead, to include HAC and Section lead. Upon completion of the R coded Division lead event, re-designation as FL and AMC can occur at the discretion of the Commanding Officer. Flight Leadership proficiency shall be tracked in MSHARP, when completing the NAVFLIR.

Stages. The following stages are included in the RQD phase.

REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
NATOPS EVALUATION (NATOPS)	2.19.1	2-125
CREW RESOURCE MANAGEMENT (CRM)	2.19.2	2-126
INSTRUMENT EVALUATION (INST)	2.19.3	2-127
HELICOPTER AIRCRAFT COMMANDER (HAC)	2.19.4	2-128
SECTION LEADER (SL)	2.19.5	2-130
DIVISION LEADER (DL)	2.19.6	2-133
FLIGHT LEADER (FL)	2.19.7	2-135
AIR MISSION COMMANDER (AMC)	2.19.8	2-137
FUNCTIONAL CHECK PILOT (FCP)	2.19.9	2-138

#### Academic/Ground Training

Purpose. Within the Flight Leadership Training Phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

The Flight Leadership Training Phase academic/ground training shall be complete IAW the POI requirements and prerequisites for the stage. Upon completion, the PUI shall report to the PTO or designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

NIPR 2000-6000 classes will be located at the MAWTS-1 NIPR website under ASD, CH-53K, T&R:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes will be located at the MAWTS-1 SIPR website under ASD, CH-53K, T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Requirements, Certifications, Qualifications, Designations, (RQD) Phase.

Academic: See event

Flight: See Event

Designation/Qualification: See Event

## 2.19 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS STAGES

### 2.19.1 CH-53K NATOPS POI

Purpose. To evaluate the airman's knowledge of aircraft systems, performance limitations, emergency procedures, flight and ground operations IAW CNAF 3710.7 and CH-53K NATOPS.

General. NATOPS Instructors/Assistant Instructor shall conduct the NATOPS evaluation in accordance with CNAF 3710.7 series and other applicable directives, instructions, and orders.

The NATOPS Evaluator shall utilize the NATOPS Model Manager generated NATOPS Aviation Training Form (ATF) and the evaluation metrics required for the accomplishment and performance of the standardized criterion to determine whether the PUI completed the sortie.

NATOPS PUIs shall complete and have a graded Open Book and Closed Book prior to the commencement of the oral evaluation and flight event.

Crew Requirements. P/P/CC/AG/O (as required).

Academic Training. Open, closed book and oral evaluation IAW CNAF 3710.7 and the CH-53K NATOPS.

**NATOPS-6000    3.0    365    B,R,S,M    G    Open Book NATOPS Exam**

Goal. Open book written examination to evaluate the airman's NATOPS knowledge IAW 3710.

Performance Standard. IAW CNAF 3710.

<b>NATOPS-6001</b>	<b>1.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>	<b>Closed Book NATOPS Exam</b>
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Goal. Closed book written examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53K NATOPS.

Performance Standard. IAW CNAF 3710 and CH-53K NATOPS.

**Prerequisite.** NATOPS-6000

<b>NATOPS-6002</b>	<b>2.0</b>	<b>365</b>	<b>B,R,S,M</b>	<b>G</b>	<b>Oral NATOPS Exam</b>
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Goal. Oral examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53K NATOPS.

**Performance Standard.** IAW CNAF 3710 and CH-53K NATOPS.

Prerequisite. NATOPS-6001

<b>NATOPS-6004</b>	<b>1.0</b>	<b>30</b>	<b>B,R,S,M</b>	<b>G</b>	<b>Monthly EP Exam</b>
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Goal. Monthly NATOPS Emergency Procedure Examination to evaluate the airman's Knowledge of Emergency Procedures.

Performance Standard. IAW CNAF 3710 and CH-53K NATOPS.

<b>NATOPS-6100</b>	<b>1.5</b>	<b>365</b>	<b>B,R,S,M</b>	<b>(N)</b>	<b>S/A</b>	<b>1</b>	<b>CFTD/CH-53K</b>
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**Goal.** Conduct Annual NATOPS evaluation by evaluating the Marine's knowledge of mission planning, briefing, normal operating procedures (flight and ground), crew resource management, aircraft systems, performance criteria, emergency procedures, and debriefing. The focus is on normal and emergency procedures. Emphasis shall be placed on the aforementioned items with the addition of comprehensive knowledge and understanding of NATOPS, local SOPs, and local course rules. The NATOPS evaluation is intended to evaluate compliance with NATOPS procedures. The NATOPS evaluation is the means to measure the Marine's efficiency in the execution of normal operating procedures and reaction to emergencies and malfunctions. The NATOPS evaluation process should be as much a learning tool and/or experience as it is an evaluation.

**Requirement.** As directed in the CH-53K NATOPS Flight Manual and CNAF 3710.7. Demonstrate comprehensive knowledge and understanding of NATOPS, local SOPs, and local course rules. The PUI shall accomplish the following criterion:

Performance Standards. The proficiency expected by the evaluator in this flight shall be commensurate with the experience level of the pilot under evaluation.

**Prerequisite.** NATOPS-6002

Range Requirements. CAL/MAL site

External Syllabus Support. CFTD as required

### 2.19.2 CRM Training

Purpose. To conduct annual CRM training.

**General.** CRM Flight may be flown concurrent with any operational or training flight or simulator, including NATOPS-6100 or INST-6102. The CRM Flight Evaluator must be designated a CRM Facilitator or CRM Instructor.

<b>CRM-6003</b>	<b>3.0</b>	<b>365</b>	<b>B,R,M</b>	<b>G</b>	<b>CH-53K CRM Class</b>
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Goal. Conduct annual CH-53K CRM Ground Training IAW CH-53K NATOPS, CNAF 3710.7 and CNAFINST 1542.7.

Performance Standards. Per CH-53K NATOPS, CNAF 3710.7 and CNAFINST 1542.7.

**CRM-6101      1.5      365      B,R,M      (N)      S/A      1      CFTD/CH-53K**

Goal. Practice/review CRM principles presented in the CH-53K annual CRM Ground Training.

Requirement

Discuss:

Decision making  
Assertiveness  
Mission analysis  
Communication  
Leadership  
Adaptability/Flexibility  
Situational awareness

Evaluate:

Decision making  
Assertiveness  
Mission analysis  
Communication  
Leadership  
Adaptability/Flexibility  
Situational awareness

Performance Standards. Demonstrate effective use of the 7 CRM critical skills and IAW CH-53K NATOPS, CNAF 3710.7, CNAFINST 1542.7.

Prerequisite. CRM-6003

### 2.19.3 CH-53K Instrument Evaluation

Purpose. To evaluate the airman's knowledge of instrument procedures and aircraft instrument systems.

General. NATOPS Instrument Instructors (NII) shall conduct the Instrument evaluation in accordance with CNAF 3710.7 series and other applicable directives, instructions, and orders.

The (NII) shall utilize the locally generated Instrument Aviation Training Form (ATF) and the evaluation metrics required for the accomplishment and performance of the standardized criterion to determine whether the PUI completed the sortie.

Instrument PUIs shall complete local instrument ground school prior to the commencement of the actual Instrument oral evaluation event.

Academic Training: Instrument Ground School IAW CNAF 3710.7.

Prerequisites. Per CNAF 3710 annual instrument requirements and Instrument Ground School.

**INST-6005      4.0      365      B,R,M      G      Instrument Ground School(IGS)**

Goal. The Instrument Ground School shall be a Commander Naval Air Forces (CNAF) approved syllabus and IAW CNAF 3710.7.

Performance Standards. Per CNAF 3710.7

**INST-6006      1.0      365      B,R,M      G      Written Instrument Exam**

Goal. The Instrument Written Instrument Examination shall be a Commander Naval Air Forces (CNAF) approved syllabus and IAW CNAF 3710.7.

Performance Standards. Per CNAF 3710.7

Prerequisite. INST-6005

**INST-6102      1.5      365      B,R,M      (N)      S/A      1      CFTD/CH-53K**

Goal. Conduct annual instrument evaluation. Following completion of the ground evaluation events, an instrument flight/simulator evaluation event shall be flown and completed with a grade of “Qualified”. Conduct an objective evaluation of the Marine’s knowledge of flight planning, filing, briefing, and conduct of flight under normal operating conditions, emergency procedures, closing out flight plans, and debriefing.

Requirement. As directed in the CH-53K NATOPS Flight Manual and CNAF 3710.7.

Performance Standards. Executes flight and/or ground operations safely IAW CNAF 3710.7 Series, Platform NATOPS, NATOPS Instrument Flight Manual, and training rules. All areas on the instrument flight evaluation are critical. An “Unsatisfactory” grade in any area shall result in an “Unsatisfactory” grade for the flight.

Prerequisites. INST-6006

External Syllabus Support. CFTD as required

2.19.4 Helicopter Aircraft Commander (HAC)

Purpose. Demonstrate knowledge, leadership, airmanship, and judgment in all phases of flight commensurate with a Helicopter Aircraft Commander.

General. Squadrons shall evaluate pilots for designations at the discretion of the Commanding Officer per the criteria in the CH-53K NATOPS Flight Manual, CNAF 3710.7, and local SOPs. Upon the successful completion of the check flight the new HAC will be designated in writing by the Squadron Commanding Officer. Prerequisite requirements may be waived at the discretion of the Squadron Commanding Officer and details of the waiver will be annotated in the APR.

Flight leadership codes do not chain other syllabus events. Log the appropriate T&R syllabus event in addition to the flight leadership code. Range, ordnance, and external support will be IAW the appropriate T&R syllabus event.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed prior to starting the Helicopter Aircraft Commander Syllabus.

Prerequisites. NSQ-LLL, Core and Mission Skill complete. 450 total hours to start the syllabus and be recommended by the Squadron Standardization Board. PUI must have 500 total hours prior to designation.

**HAC-6120      1.5      \*      B      D      A/S      1      CH-53K/CFTD**

Goal. Conduct day HAC review.

Requirement. As directed in the CH-53K NATOPS and CNAF 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

Evaluate:

- Low work
- Pattern work
- Normal/precision hover
- No hover landings
- Hook/pendant preflight
- External precision hover
- External pickup
- External pattern work
- External delivery
- Actions in the objective area
- Ability to accurately assess mission, recall events, provide reconstruction and analysis

Performance Standards. Demonstrate proficiency, leadership and instructional techniques in all phases of CH-53K operations as appropriate. Emphasize NATOPS, ANTTP 3-22.3-CH53, ASTACSOP, MAG and squadron SOPs, and the Instrument Flight Manual.

Prerequisites. NSQ-LLL, Core and Mission Skill complete, 450 Flight hours

Range Requirements. CAL/MAL site

<b>HAC-6121</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>NS</b>	<b>A/S</b>	<b>1</b>	<b>CH-53K/CFTD</b>
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Goal. Conduct NS HAC review.

Requirement. Same as HAC-6120 with emphasis on NS planning and considerations.

Evaluate:

- Low work
- Pattern work
- Normal/precision hover
- No hover landings
- NS formation
- NS landings
- Hook/pendant preflight
- External precision hover
- External pickup
- External pattern work
- External delivery
- Actions in the objective area
- Ability to accurately assess mission, recall events, provide reconstruction and analysis

Performance Standards. Demonstrate proficiency and leadership in all phases of CH-53K operations as appropriate. Emphasize NATOPS, ANTTP 3-22.3-CH-53, MAWTS-1 NVD Manual, MAG and squadron SOPs, and the Instrument Flight Manual.

Prerequisites. NSQ-LLL, Core and Mission Skill complete, 450 flight hours

Range Requirements. CAL/MAL site

<b>HAC-6122</b>	<b>2.0</b>	<b>*</b>	<b>B,R,S</b>	<b>(N)</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct day into night HAC check.

Requirements. As directed in the CH-53K NATOPS and CNAF 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

Evaluate:

- Low work
- Pattern work
- Normal/precision hover
- No hover landings
- NS formation
- NS landings
- Hook/pendant preflight
- External precision hover
- External pickup
- External pattern work
- External delivery
- Actions in the objective area
- Ability to accurately assess mission, recall events, provide reconstruction and analysis

Performance Standards. Squadrons shall evaluate pilots for HAC designation at the discretion of the Commanding Officer per the criteria in the CH-53K NATOPS, CNAF 3710.7, and local SOPs. This flight will cover all practicable operations and procedures contained in the T&R syllabus.

Instructor. NATOPS Instructor or Assistant NATOPS Instructor

Prerequisites. HAC-6120 and HAC-6121, NATOPS-6001

Ordinance. As required.

External Syllabus Support. As required.

#### 2.19.5 Section Leader (SL)

Purpose. To prepare and evaluate the prospective Section Leader's ability to plan, brief and lead an event as a Section Leader (SL).

General. The Section Leader syllabus is comprised of four total flights; 2 events focusing on Core Skill based evaluations and 2 events focusing on Mission Skill based scenarios. Two of the four events may be flown in the simulator and two events shall be flown at night employing night systems in the aircraft. In addition, the Section Leader syllabus can be flown in any order with the exception of SL-6203 which shall be flown last and in the aircraft.

All prospective Section Leader events shall be evaluated by a designated Division Leader or higher. During syllabus flights, the instructor may fly in a separate aircraft than the student. The Section Leader evaluation flight (SL-6203) shall be administered by a Flight Leadership Standardization Evaluator (FLSE) in the aircraft with the Section Leader Under Instruction (SLUI).

Completion of the Section Leader syllabus meets the requirements for designation as Section Leader. At the discretion of the Squadron Commanding Officer, a letter designating the pilot as Section Leader shall be placed in the NATOPS jacket and APR. For aircrew requiring Core Skill introduction refresher training, re-designation will require only the successful completion of the evaluation event at the discretion of the Squadron Commanding Officer.

The SLUI will perform preflight planning, conduct a tactical brief as required, NATOPS brief, lead a section and conduct a debrief. Evaluation will be based on mission accomplishment, adherence to all applicable directives, orders, SOPs, ATC and course rules. Further evaluation will concentrate on flight safety, section control, formation integrity, and communication procedures. Aircraft should be configured with all weapons and systems required for the scenario.

Crew Requirements. P/P/CC/AG/O

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, and chalk talks which shall be completed prior to starting the Section Leader Syllabus.

Prerequisites. Prior to beginning the Section Leader syllabus, the SLUI must be designated a HAC with a minimum of 25 aircraft commander hours, be nominated by the Standardization Board, and have flown a minimum of three flights as a HAC in a wingman position. The following events/designations are prerequisites prior to the commencement of the Section Leader Syllabus:

Academic: ACPM-8661-8664  
Flight: HAC-6122  
Designation/Qualification: HAC

<b>SL-6200</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(NS)</b>	<b>A/S</b>	<b>2</b>	<b>AsltSpt A/C /CFTD TEN+</b>
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Goal. Conduct a day or night Core Skill based Section Leader review.

Requirements. Plan, brief, lead, and debrief a section flight utilizing the principles of CRM and flight leadership. The flight should offer sufficient opportunity to demonstrate cruise principles, conduct lead changes, TERF flight and navigation, cruise and parade formations, and section landings. The SLUI shall demonstrate comprehensive knowledge and understanding of the T&R Manual, NATOPS, CNAF 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Performance Standards. TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm.

NS (HLL or LLL) events shall ensure proper NVD considerations and planning is accomplished.  
Brief event IAW SOPs and TTPs  
Conduct event IAW NATOPS and CNAF 3710.7

Maintain proper formation and mutual support to and from the working area  
Ensure effective CRM for navigation and obstacle clearance  
Demonstrate effective inter and intra cockpit communication and leadership required for precise navigation and flight management.  
Effectively manage fuel and airspace.  
Accurately recall and reconstruct events during debrief.  
Provide valid learning points

Instructor: Division Leader or higher

Prerequisites. ACPM-8661-8664, Designated HAC with a minimum of three flights as a HAC in a wingman position

External Syllabus Support. CFTD TEN+ (as required)

<b>SL-6201</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(NS)</b>	<b>A/S</b>	<b>2</b>	<b>AsltSpt A/C /CFTD TEN+</b>
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Goal. Plan, brief, lead, and debrief a MCT based tactical scenario, day or night, utilizing principles of CRM and flight leadership to ensure mission success.

Requirements. Plan, brief, lead and debrief a day or night section in a low/medium threat MCT based tactical flight to include escort and fire support considerations. The SLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles. Emphasis should be on mission analysis using METT-TC, the mission planning process, weapons and ASE employment (evasive actions, sectors of fire), integrated objective area planning, and escort considerations. Additional emphasis on night considerations as applicable, detailed fuel planning, contingency planning, and mission delegation of tasks.

#### Performance Standards

Plan and brief a tactical mission IAW the ASTACSOP, ANTP 3-22.3 and all applicable SOPs  
Arrive at LZ +/- 30 seconds of L-Hour  
TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm  
Land at points best supporting the Ground Combat Element's scheme of maneuver  
Demonstrate proper employment and understanding of ASE  
Demonstrate proper use of tactical formations  
Demonstrate situational awareness of other aircraft through all phases of flight  
Demonstrate positive control of flight  
As applicable, demonstrate proper understanding of NS considerations with multiple aircraft and aerial gunnery  
As applicable, demonstrate proper understanding of laser employment  
Demonstrate proper understanding of MACCS system to facilitate execution and information flow  
Demonstrate appropriate consideration for threat from planning through execution  
Demonstrate understanding of aircraft maneuver with regard to threat response in concert with proper aerial gunnery employment  
Demonstrate proper understanding of escort considerations  
Demonstrate proper understanding and utilization of secure and active communications  
Demonstrate understanding of FSCM utilization  
Demonstrate understanding of contingency considerations

Instructor. Division Leader or higher

Prerequisites. ACPM-8661-8664, Designated HAC with a minimum of three flights as a HAC in a wingman position.

External Syllabus Support. Escort FW/RW aircraft optional, CFTD TEN+ (as required)

**SL-6202      1.5      \*      B      (NS)      A/S      2      AsltSpt A/C /CFTD TEN+**

Goal. Conduct a day or night Core Skill based Section Leader review.

Requirements. Plan, brief, lead, and debrief a section flight utilizing principles of CRM and flight leadership to ensure mission success. The flight should offer sufficient opportunity to demonstrate cruise principles, conduct lead changes, TERF flight and navigation, cruise and parade formations, and section landings. The SLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, CNAF 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Performance Standards

TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm.  
NS (HLL or LLL) events shall ensure proper NVD considerations and planning is accomplished  
Brief event IAW SOPs and TTPs  
Conduct event IAW NATOPS and CNAF 3710  
Maintain proper formation and mutual support to and from the working area  
Ensure effective CRM for navigation and obstacle clearance  
Demonstrate effective inter and intra cockpit communication and leadership required for precise navigation and flight management  
Effectively manage fuel and airspace  
Accurately recall and reconstruct events during debrief  
Provide valid learning points

Instructor. Division Leader or higher

Prerequisites. ACPM-86661-8664; Designated HAC with a minimum of three flights as a HAC in a wingman position.

External Syllabus Support. CFTD TEN+ (as required).

**SL-6203      1.5      \*      B,R      NS      A      2      AsltSpt Aircraft**

Goal. Conduct a Section Leader evaluation using an MCT based tactical scenario in a low to medium threat night environment. Emphasis should be on situational awareness, flight maturity, CRM, and the tactical and operational knowledge required of a Section Lead.

Requirement. Completion of 6200, 6201, and 6202 meets the requirement for the SLUI to be designated a Section Leader. The SLUI shall plan, brief, lead, and debrief a night section in a low/medium threat MCT based tactical flight. This flight should include escort, fire support considerations, and aerial gunnery. The SLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOP, local course rules, and ORM/CRM principles.

Performance Standards

Plans and brief a tactical mission IAW the ASTACSOP, ANTTP 3-22.3 and all applicable SOPs.  
Arrive at LZ +/- 30 seconds of L-Hour.  
TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm.  
Land at points best supporting the Ground Combat Elements scheme of maneuver.  
Demonstrate proper employment of ASE.  
Demonstrate proper use of tactical formations.  
Demonstrate situational awareness of other aircraft through all phases of flight.  
Demonstrate positive control of flight.  
As applicable, demonstrate proper understanding of NS considerations with two aircraft and aerial gunnery.  
As applicable, demonstrate proper understanding of laser employment.



Demonstrate proper understanding of MACCS system to facilitate execution and information flow.  
Demonstrate appropriate consideration for threat from planning through execution.  
Demonstrate understanding of aircraft maneuver with regard to threat response in concert with proper aerial gunnery employment.  
Demonstrate proper understanding of escort considerations.  
Demonstrate proper understanding and utilization of secure and active communications.  
Demonstrate understanding of FSCM utilization.  
Demonstrate understanding of contingency considerations.

Instructor: FLSE

Prerequisites. 6200, 6201, 6202

#### 2.19.6 Division Leader (DL)

Purpose. To prepare and evaluate the prospective Division Lead's ability to plan, brief and lead an event as a Division Lead.

General. The Division Leader syllabus is comprised of three flights; one event focusing on core skill based evaluation and two events focusing on MCT based scenarios. One of the three events may be flown in the simulator and two of the three events shall be flown at night. The two events flown at night shall be flown in the aircraft. In addition, the Division Leader syllabus can be flown in any order with the exception of DL-6302 which shall be flown last and in the aircraft.

All prospective Division Leader events shall be evaluated by a designated FL or higher. During syllabus flights, the instructor may fly in a separate aircraft than the student. The Division Leader evaluation flight (DL-6302) shall be flown with a Flight Leadership Standardization Evaluator (FLSE) in the aircraft with the Division Lead Under Instruction (DLUI).

Completion of the Division Leader syllabus meets the requirements for designation as 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. Aircraft should be configured with all weapons and systems required for the scenario.

For aircrew that require Core Skill introduction refresher training, re-designation will require successful completion of the evaluation event only. Refresher evaluations may be flown during the day.

For aircrew that require Core Skill introduction refresher training, and were previously designated a Flight Leader and/or Air Mission commander, successful completion of the R coded Division Leader Evaluation event fulfills all requirements for re-designation as a Flight Leader and/or Air Mission Commander, at the discretion of the squadron Commanding Officer.

The DLUI will perform preflight planning, conduct a tactical mission and NATOPS brief, lead a division and conduct a debrief. Evaluation will be based on mission accomplishment, adherence to all applicable directives, orders, SOPs, ATC and course rules. Further evaluation will concentrate on flight safety, division control, formation integrity, and communication procedures. Aircraft should be configured with all weapons and systems required for the scenario.

Crew Requirements. P/P/CC/AG/O

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings and chalk talks which shall be completed prior to starting the Division Leader Syllabus.

Prerequisites. Prospective division leaders shall be designated section leaders with 600 total flight hours, 200 hours in type, 50 hours in model, and must be nominated by the standardization board prior to beginning the division leader syllabus. The following events/designations are prerequisites prior to the commencement of the Division Leader Syllabus:

Academic: ACPM-8688  
Flight: SL-6203 and three flights as a Section Leader  
Designation/Qualification: Section Lead

**DL-6300      1.5      \*      B      (NS)      A/S      3+      AsltSpt A/C /CFTD TEN+**

Goal. Conduct a day or night Core Skill based Division Leader review.

Requirements. Plan, brief, lead, and debrief a division flight utilizing the principles of CRM and flight leadership. The flight should offer sufficient opportunity to demonstrate cruise principles, conduct lead changes, TERF flight and navigation, cruise and parade formations, and division landings. The DLUI shall demonstrate comprehensive knowledge and understanding of the T&R Manual, NATOPS, CNAF 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Performance Standards. TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm.

NS (HLL or LLL) events shall ensure proper NVD considerations and planning is accomplished  
Brief event IAW SOPs and TTPs  
Conduct event IAW NATOPS and CNAF 3710.7  
Maintain proper formation and mutual support to and from the working area  
Ensure effective CRM for navigation and obstacle clearance  
Demonstrate effective inter and intra cockpit communication and leadership required for precise navigation and flight management  
Effectively manage fuel and airspace  
Accurately recall and reconstruct events during debrief  
Provide valid learning points

Instructor. Flight Leader or higher

Prerequisites. ACPM-8688, Designated SL with a minimum of three flights as a Section Leader

External Syllabus Support. CFTD TEN+ (as required)

**DL-6301      1.5      \*      B      (NS)      A/S      3+      AsltSpt A/C /CFTD TEN+**

Goal. Conduct a Division leader review utilizing a MCT based tactical scenario in a low to medium threat environment. Emphasis should be on situational awareness, flight maturity, CRM, and the tactical and operational knowledge required of a Division Lead.

Requirements. Plan, brief, lead, and debrief a tactical division flight utilizing principles of CRM and flight leadership to ensure mission success. Flight should offer sufficient opportunity to conduct lead changes, cruise principles, cruise and parade formations, and division landings. The DLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOP, local course rules, and ORM/CRM principles.

Performance Standards

Plans and briefs a tactical mission IAW the ASTACSOP, ANTP 3-22.3 and all applicable SOPs  
Arrive at LZ +/- 30 seconds of L-Hour  
TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm  
Land at points best supporting the Ground Combat Elements scheme of maneuver  
Demonstrate proper employment of ASE  
Demonstrate proper use of tactical formations  
Demonstrate situational awareness of other aircraft through all phases of flight  
Demonstrate positive control of flight  
As applicable, demonstrate proper understanding of NS considerations with multiple aircraft and aerial gunnery  
As applicable, demonstrate proper understanding of laser employment  
Demonstrate proper understanding of MACCS system to facilitate execution and information flow  
Demonstrate appropriate consideration for threat from planning through execution

Demonstrate understanding of aircraft maneuver with regard to threat response in concert with proper aerial gunnery employment  
Demonstrate proper understanding of escort considerations  
Demonstrate proper understanding and utilization of secure and active communications  
Demonstrate understanding of FSCM utilization  
Demonstrate understanding of contingency considerations

Prerequisites

ACPM-8688  
Designated SL  
Minimum of three flights as a Section Leader

External Syllabus Support. CFTD TEN+ (as required). Escort FW/RW aircraft optional

**DL-6302      1.5      \*      B,R      (NS)      A      3+      AsltSpt Aircraft**

Goal. Conduct a Division leader check utilizing a Mission Skill based tactical scenario in a low to medium threat environment. Emphasis should be on situational awareness, flight maturity, CRM, and the tactical and operational knowledge required of a Division Lead.

Requirements. Plan, brief, lead, and debrief a tactical division flight utilizing principles of CRM and flight leadership to ensure mission success. Flight should offer sufficient opportunity to conduct lead changes, cruise principles, cruise and parade formations, and division landings. The DLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOP, local course rules, and ORM/CRM principles.

Performance Standards

Plans and briefs a tactical mission IAW the ASTACSOP, ANTTTP 3-22.3 and all applicable SOPs  
Arrive at LZ +/- 30 seconds of L-Hour  
TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm  
Land at points best supporting the Ground Combat Elements scheme of maneuver  
Demonstrate proper employment of ASE  
Demonstrate proper use of tactical formations  
Demonstrate situational awareness of other aircraft through all phases of flight  
Demonstrate positive control of flight  
As applicable, demonstrate proper understanding of NS considerations with multiple aircraft and aerial gunnery  
As applicable, demonstrate proper understanding of laser employment  
Demonstrate proper understanding of MACCS system to facilitate execution and information flow  
Demonstrate appropriate consideration for threat from planning through execution  
Demonstrate understanding of aircraft maneuver with regard to threat response in concert with proper aerial gunnery employment  
Demonstrate proper understanding of escort considerations  
Demonstrate proper understanding and utilization of secure and active communications  
Demonstrate understanding of FSCM utilization  
Demonstrate understanding of contingency considerations

Instructor. FLSE

Prerequisites. 600 total flt hours, 200 in type, 50 hours in model, DL-6300-6301

External Syllabus Support: Escort FW/RW aircraft optional

2.19.7 Flight Leader (FL)

Purpose. To evaluate the prospective Flight Leader's ability to plan, brief and lead an event as a Flight Leader.

General. The Flight Lead evaluation flight shall be flown in the aircraft and may be flown either day or night. Aircraft should be configured with all weapons and systems required for the scenario.

The FL evaluation flight shall be evaluated by a FLSE. Completion of the Flight Leader evaluation 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. For aircrew requiring Core Skill introduction refresher training and previously designated a Flight Leader, re-designation will require successful completion of the R coded Division Leader evaluation event, at the discretion of the squadron Commanding Officer.

The Flight Lead Under Evaluation (FLUI) will perform preflight planning, conduct a tactical mission brief, lead a flight of five (5) or more assault aircraft with optional escorts, and conduct a debrief. Evaluation will be based on mission accomplishment, adherence to all applicable directives, orders, SOPs, ATC and course rules. Further evaluation will concentrate on flight safety, flight control, formation integrity, and communication procedures. Additionally, evaluation will address tactical soundness, contingency planning, brief delivery, and use of supporting arms and flexibility during execution. Aircraft should be configured with all weapons and systems required for the scenario.

Prospective Flight Leads shall be Division Leaders with a minimum of 700 total flight hours and nominated by the Standardization Board. Prospective Flight Leads shall have flown three division leader flights.

Crew Requirements. P/P/CC/AG/O

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, chalk talks which shall be completed prior to starting the Flight Leader Syllabus.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Flight Leader Syllabus:

Academic: ACPM-8685-8687

Flight: DL-6302 and Minimum three flights as a Division Leader, one of which may be flown in a TEN+ simulator

Designation/Qualification: Division Lead

<b>FL-6400</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(NS)</b>	<b>A</b>	<b>5+</b>	<b>AsltSpt Aircraft</b>
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Goal. Conduct Flight Leader check utilizing a MCT based tactical scenario. Scenario used should not be the same MCT scenario used during Division Leader Check. Emphasis should be on planning, coordination and control of all supporting arms, escorts and agencies in meeting with mission requirements.

Requirement. Plan, brief, lead and debrief a tactical flight utilizing principles of CRM and flight leadership to ensure mission success. Flight should offer sufficient opportunity to conduct lead changes, cruise principles, cruise and parade formations, and Flight landings. The FLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOP, local course rules, and ORM/CRM principles.

The FLUI shall accomplish the following criteria:

Brief in accordance with ASTACSOP and ANTP 3-22.3-CH53

Complies with Wing, MAG, and squadron SOPs

#### Performance Standards

Plan and brief a MCT based tactical mission IAW ASTACSOP and ANTP 3-22.3-CH-53K  
TERF events shall navigate a route at or below 200' AGL and/or within 200' of terrain and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm.

Comply with all applicable SOPs

Arrive at LZ +/- 30 seconds of briefed plan

Land at points best supporting the Ground Combat Elements scheme of maneuver

Demonstrate proper employment and understanding of ASE

Demonstrate proper use of tactical formations

Demonstrate situational awareness of other aircraft through all phases of flight

Demonstrate positive control of flight  
As applicable, demonstrate proper understanding of NS considerations with multiple aircraft, aerial gunnery, and laser employment  
Demonstrate proper understanding of MACCS system to facilitate execution and information flow  
Demonstrate appropriate threat consideration from planning through execution  
Demonstrate understanding of aircraft maneuver with regard to threat response in concert with proper aerial gunnery employment  
Demonstrate proper understanding of escort considerations  
Demonstrate proper understanding and utilization of secure and active communications  
Demonstrate understanding of FSCM utilization  
Demonstrate understanding of contingency considerations  
Demonstrate GCE accountability to and from the objective area  
Demonstrate the ability to conduct timely and effective contingency planning

Instructor: FLSE

Prerequisites. ACPM-8685-8687, minimum 3 flights as a Division Leader: Minimum 700 Flight hours

External Syllabus Support. CAL/MAL sites and authorized TERF areas as required. RW and/or FW escort preferred but not required

## 2.19.8 Air Mission Commander (AMC)

Purpose. To prepare and evaluate the prospective Air Mission Commander's ability to plan, brief and lead an event as an Air Mission Commander.

General. Air Mission Commander evaluation event may be conducted from an aircraft, a C&C platform, or an appropriate ground based COC. The AMC evaluation flight shall be evaluated by a FLSE.

Completion of AMC-6500 meets the requirements for designation as Air Mission Commander, at the discretion of the squadron Commanding Officer. A letter designating the pilot as an Air Mission Commander shall be placed in the NATOPS jacket and APR. For aircrew requiring Core Skill introduction refresher training and previously designated an Air Mission Commander, re-designation will require successful completion of the R coded Division Leader evaluation event, at the discretion of the squadron Commanding Officer. Aircraft should be configured with all weapons and systems required for the scenario.

The AMC designation is a function of flight leadership, maturity and experience. The AMC should lead the mission from a C&C aircraft, if available. The Air Mission Commander Under Evaluation (AMCUI) will perform preflight planning, conduct a tactical mission brief, command a flight of two divisions or more, and conduct a debrief. The AMC shall be evaluated on his ability to integrate the six functions of Marine Aviation. Evaluation will be based on mission accomplishment, adherence to all applicable directives, orders, and SOPs. Further evaluation will concentrate on communication planning, coordination of multiple agencies and flight safety. Additionally, evaluation will address tactical soundness of contingency planning, brief delivery, and use of supporting arms and flexibility during execution. Aircraft should be configured with all weapons and systems required for the scenario.

Crew Requirements. As required.

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, chalk talks, and lectures which shall be completed prior to starting the Air Mission Commander Syllabus.

Prerequisites. Prospective Air Mission Commanders shall be an FL and shall be nominated by the Standardization Board. The following events/designations are prerequisites prior to the commencement of the Air Mission Commander Syllabus:

Academic: ACAD-6580  
Flight: FL-6400  
Designation/Qualification: Flight Lead

**AMC-6500      1.5      \*      B      (NS)      GE      5+      MULTIPLE ELEMENTS**

Goal. Conduct a day or night Air Mission Commander (AMC) check utilizing a MCT based tactical scenario.

**Requirement.** Plan, brief, lead, and debrief a day or night multi-element, multi-T/M/S tactical mission in any threat environment. The AMCUI shall be evaluated on his/her ability to integrate the six functions of Marine Aviation and should lead the mission from a C&C platform or COC (as appropriate).

Discuss:

- Mission analysis and METT-TC
- Marine Corps Planning Process (MCP) / 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 Coordination Area(MCA) selection
- Secure vs. active communications
- EMCON and radio procedures
- Information flow requirements
- Execution checklist utilization

Review:

- Tactical mission planning and briefing.
- Command and control during a tactical mission.

**Performance Standards.** The AMCUI shall conduct mission analysis IAW MCWP 5-10, delegate mission tasks to the most advantageous asset/flight, ensure coordination and supervision of key personnel during planning, conduct tactical planning IAW ANTP series publications, develop a plan that integrates the six functions of Marine Aviation and AGS, develop a plan that fully supports the GCE ground scheme of maneuver and Essential Fire Support Tasks (EFSTs), conduct an AMC brief IAW ANTP series publications, maintain SA of all assets participating in the mission, maintain SA on mission progress/execution, maximize C&C platform capabilities, demonstrate proper decision making and task delegation in response to immediate missions and/or contingencies, execute appropriate command and control to ensure mission success. 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. Possess the tactical and operational knowledge required of an AMC.

**Prerequisite.** Designated Flight Leader, ACAD-6580

**Ordnance.** As required

**Range Requirements.** 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).

## 2.19.9 Functional Check Pilot (FCP)

**Purpose.** To prepare and evaluate the prospective functional check pilot's ability to safely and proficiently conduct Functional Check Flights.

**General.** The CH-53K model manager for the CH-53K, will manage the FCP instructor standardization program. . A designated FCP shall be the instructor for all FCPUT training events. Aircraft in a test status are preferred but are

not required for the completion of an FCPUT event. FCP evaluation flights shall be administered by a senior squadron FCP as determined by the Squadron Commanding Officer.

Crew Requirements. P/P/CC.

Prerequisites. Prospective Functional Check Pilots shall be a designated HAC with a minimum of 25 aircraft commander hours prior to the start of the syllabus, and nominated by the Standardization Board. Prior to their FCP designation, pilots must attain a minimum of 50 aircraft commander hours.

Academic Training. FCPUI will have a thorough understanding of the readings from CNAF 3710.7, CH-53K NATOPS, 4790 Naval Aviation Maintenance Program, MIMS, and local SOP's that pertain to FCF operations. The FCP required readings and lectures included in ACAD-6012 shall be administered by FCPIs or AFCPIs.

**FCP-6610      1.0      \*      B,S      D      S/A      1      CFTD/CH-53K**

Goal. Introduce IVHMS Functional Check Flight procedures

Requirements

Discuss:

IVHMS  
Maintenance actions requiring AFCS checks  
QA brief/debrief

Introduce:

Use of IVHMS  
QA brief/debrief

Performance Standards. FCPUI is expected to have a working knowledge of the procedures and concepts listed above as written in CH-53K NATOPS (CH. 10). FCPUI is able to answer questions and discuss the systems being checked as outlined above. As required, the FCP will demonstrate procedures in order to ensure standardized execution. The FCP should point out common errors in execution as well as common system failures that the FCPUI should look for.

Prerequisite. Recommendation by Stan Board. 25 HAC hours.

**FCP-6611      1.0      \*      B      D      S/A      1      CFTD/CH-53K**

Goal. Review IVHMS Functional Check Flight procedures.

Requirements

Discuss:

Conditions requiring a AFCS checks  
AFCS check procedures  
QA brief/debrief

Practice:

AFCS check procedures  
QA brief/debrief

Performance Standards. FCPUI will demonstrate the ability to navigate and gather appropriate information from IVHMS. The evaluator should only need to offer little procedural guidance and troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing though QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management and aircrew coordination.

Prerequisites. FCP 6610

**FCP-6612      1.0      \*      B,S      D      S/A      1      CFTD/CH-53K**

Goal. Introduce full card Functional Check Flight procedures

Requirements

Discuss:

Conditions requiring mechanical flight control checks  
QA brief/debrief

Introduce:

QA brief/debrief

Performance Standards. FCPUI is expected to have a working knowledge of the procedures and concepts listed above as written in CH-53K NATOPS (CH. 10). FCPUI is able to answer questions and discuss the systems being checked as outlined above. As required, the FCP will demonstrate procedures in order to ensure standardized execution. The FCP should point out common errors in execution as well as common system failures that the FCPUI should look for.

Prerequisites. Recommendation by Stan Board. 25 HAC hours

<b>FCP-6613</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>S/A</b>	<b>1</b>	<b>CFTD/CH-53K</b>
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Goal. Evaluate full card Functional Check Flight procedures.

Requirements

Discuss:

Conditions requiring a mechanical flight control checks  
Mechanical flight control check procedures  
QA brief/debrief

Practice:

Mechanical flight control check procedures  
QA brief/debrief

Performance Standards. FCPUI will demonstrate the ability to conduct a C-card functional check flight. The evaluator should only need to offer little procedural guidance and troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing through QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management and aircrew coordination.

Prerequisites: FCP 6612 (mechanical flight control SIM Flight)

<b>FCP-6614</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Review full card Functional Check Flight procedures

Requirements

Discuss:

Conditions requiring a full test card  
Full test card procedures  
IVHMS testing procedures  
QA brief/debrief

Introduce:

Full test card procedures  
IVHMS testing procedures  
QA brief/debrief

Performance Standards. FCPUI is expected to have a working knowledge of the procedures and concepts listed above as written in CH-53K NATOPS (CH. 10). FCPUI is able to answer questions and discuss the systems being checked as outlined above. As required, the FCP will demonstrate procedures in order to ensure standardized execution. The FCP should point out common errors in execution as well as common system failures that the FCPUI should look for.

Prerequisites. FCP-6610-6613

<b>FCP-6615</b>	<b>1.5</b>	<b>*</b>	<b>B,R,S</b>	<b>D</b>	<b>S/A</b>	<b>1</b>	<b>CH-53K</b>
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Goal. Conduct a functional check pilot evaluation.

Requirements. Squadrons shall evaluate pilots for designation at the discretion of the Commanding Officer per the criteria in the CH-53K NATOPS Flight Manual, CNAF 3710.7, 4790 Naval Aviation Maintenance Program, MIMS, and local SOPs.

Discuss:

Any previously discussed item in the FCP syllabus.

Review:

Full test card procedures.

Perform a full test card FCF

Performance Standards. FCPUI will be evaluated on the ability to conduct a full-systems functional check flight. The evaluator should not need to offer procedural guidance or provide troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing through QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management, and aircrew coordination.

Instructor. FCPI or AFCPI

Prerequisites. FCP-6610-FCP-6614, completion of the squadron academic syllabus, and as determined by squadron CO, AMO, QAO, and STAN Board.

## 2.20 MISSION ESSENTIAL TASK (MET) PHASE

### 2.20.1 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 3502.1XX, 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 (SLTE) 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, 3500.14E and submitted to CG, MCCDC (via AMHS message attachment to CG TECOM MTESD) no later than 45 days after MCCRE completion.

2.20.2 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.

MISSION ESSENTIAL TASKS PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
COMBAT ASSAULT TRANSPORT (CAT)	2.21.3	2-142
HEAVY ROTARY WING AIR DELIVERY (AD)	2.21.3	2-142
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)	2.21.3	2-143
AIR EVACUATION (AE)	2.21.3	2-143
RAPID INSERTION/ EXTRACTION (RIE)	2.21.3	2-143

MISSION ESSENTIAL TASKS PHASE		
AVIATION DELIVERED GROUND REFUELING (ADGR)	2.21.3	2-144
EXPEDITIONARY SEA-BASED OPERATIONS (SEA)	2.21.3	2-144

## 2.21 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.

<b>MET-7001</b>	<b>1.5</b>	<b>730</b>	<b>B.R.M</b>	<b>(NS)</b>	<b>A</b>	<b>2+</b>	<b>CH-53K</b>
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**Goal.** Demonstrate the capability to conduct combat assault transport operations in a low to medium threat environment. Aviation combat assault transport operations provides mobility to the MAGTF. It is used to deploy forces (air-landed or air-delivered) efficiently in offensive maneuver warfare, bypass obstacles, or quickly redeploy forces. Combat assault support allows the MAGTF Commander to build up his forces rapidly at a specific time and location, and allows him to apply and sustain combat power and strike the enemy where he is unprepared. This function comprises those actions required for the airlift of personnel, supplies and equipment into or within the battle area by helicopter, tiltrotor or fixed-wing aircraft. (JP 3-0, 4-0, MCWP 3-20, MAWTS-1).

**Performance Standard.** Plan, brief and execute a tactical assault support mission (MARLOG, general support, NEO, resupply, insert, extract). If an L-Hour is utilized arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Demonstrate a thorough understanding of objective area mechanics, command and control procedures, and fire support control measures. Demonstrate a thorough understanding of proper procedures to secure cargo and personal gear.

Instructor. MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

**Prerequisites.** CAT-3140

Ordnance. IAW Phase.

**Range Requirement.** Live fire and expendable range as required.

External Syllabus Support. Command and Control system if available. Escort and/or Command and Control aircraft are preferred, if available. Ground Combat Element preferred if available.

<b>MET-7002</b>	<b>1.5</b>	<b>730</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>2+</b>	<b>CH-53K</b>
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**Goal.** Demonstrate the ability to conduct heavy rotary wing air delivery (AD) in a low to medium threat environment. AD is in-flight transportation of equipment and supplies to remote areas or expeditionary sites [tactical landing zones, austere forward operating sites, Naval shipping, Forward Operating Bases (FOBs), Expeditionary Airfields (EAFs), Forward Arming and Refueling Points (FARPs), etc.]. AD operations are performed by fixed-wing, tiltrotor or rotary-wing aircraft when it is more advantageous not to land. Delivery can be accomplished with aircraft internal/external loads, or loads can be air dropped using specially rigged aerial delivery equipment and systems. AD operations require detailed planning and integration at all levels and must support units in a rapidly changing environment.(JP 1, 3-0, 4-0, MCWP 3-20, MCTP 3-01B, MCTP 3-20A, 4-1, 4-11, 4-11.3, NDP-4, NWP 4-01, NAVSUP PUB Series)

Performance Standard. Plan, brief and execute a tactical air delivery mission (External operations, internal cargo operations, or air drop) in a low to medium threat environment. If an L-Hour is utilized arrive in the LZ +/- 30 sec.

Instructor. MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. AD-3240

Ordnance. IAW Phase

Range Requirement. Live fire range and approved drop zone as required

External Syllabus Support. HST, as required. Jump Master and ground safety personnel, as required

**MET-7003      1.5      730      B,R,M      (NS)      A      2+      CH-53K**

Goal. Demonstrate the ability to conduct TRAP in a low to medium threat environment. TRAP is performed for the specific purpose of the recovery of personnel, equipment, and/or aircraft. TRAP is conducted to locate and extract distressed personnel and sensitive equipment from enemy controlled area during wartime or contingency operations to prevent capture. TRAP is performed by an assigned and briefed aircrew and is a subcomponent of Joint Personnel Recovery (PR). A TRAP mission may include personnel to conduct the search portion of recovery missions. The composition of a tactical recovery mission may vary from a single aircraft and aircrew to an assault support mission package that consists of multiple fixed-wing and rotary-wing aircraft with an onboard compliment of security, ground search, and medical personnel. (JP 1, 3-0, 3-50.2, MCRP 2-10A.2, 3-2, MCTP 3-01B, MCTP 3-20E, MCRP 3-20F.2, NDP 1, NWP 3-05)

Performance Standard. Plan, brief and execute a TRAP mission. 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. TRAP-3340

Ordnance. IAW Phase

Range Requirement. Live fire and expendable range as required

External Syllabus Support. Escort 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-7004      1.5      730      B,R,M      (NS)      A      2+      CH-53K**

Goal. Demonstrate the ability to conduct an air evacuation operation in a low to medium threat environment. Air evacuation is the transportation of personnel and equipment from areas of operations to secure rear areas, to include casualty evacuations (CASEVAC), extraction of forces, or civilians. Transport helicopters, tiltrotor, and fixed-wing transport aircraft perform air evacuations. (JP 3-10.1, MCDP 1-0, MCWP 3-2, 3-11.4, 3-16, 3-24, 3-25, 3-27, 3-36)

Performance Standard. Plan, brief and execute a tactical air evacuation mission. If an L-Hour is utilized arrive in the LZ +/- 30 sec in a position to best support the ground combat element.

Instructor. MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. AE-3440

Ordnance. IAW Phase

Range Requirement. Live fire and expendable range as required

External Syllabus Support. Ground Combat Element and/or Logistics Combat Element is preferred if available

**MET-7005      1.5      730      B,R,M      (NS)      A      2+      CH-53K**

Goal. Demonstrate the ability to conduct tactical airborne rapid insertion/extraction operations in a low to medium threat environment. Helicopter Rope Suspension Techniques (HRST) provides Marines with the ability to conduct insertions and extractions where landings are impractical. Airborne rapid insertion/extraction includes methods such

as rappelling, fast rope, special patrol insertion and extractions, etc. (MCWP 3-2, MCTP 3-01B, MCTP 3-20E, MCRP 3-01B.1). A landing to the X, Y, or Offset may be used for the insert and/or extract if tactical considerations dictate that a landing would be most appropriate.

Performance Standard. Plan, brief and execute a tactical airborne rapid insertion/extraction mission. If a L-Hour is utilized arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Execute an approach and hover within +/- 5' of intended altitude and within 10' of intended spot and/or fly with +/- 50' of designated altitude and +/- 5 kts of designated airspeed.

Instructor. MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. RIE-4980

Ordnance. Two .50 cal (TG and rounds per weapon are optional).

Range Requirement. Suitable CAL/MAL site.

External Syllabus Support. HRST Master and ground safety personnel, if applicable.

<b>MET-7006</b>	<b>1.5</b>	<b>730</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>2+</b>	<b>CH-53K</b>
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Goal. Demonstrate the ability to provide aviation-delivered ground refueling to combat aircraft or tactical vehicles in a low to medium threat environment. Aviation-delivered ground refueling is a method of providing fuel to aircraft and tactical ground vehicles (TGV) utilizing CH-53K aircraft in austere locations, where no other source of fuel is readily available. This method of refueling permits operation of fixed- and rotary-wing aircraft and TGV without the requirement to commit the significant logistical assets necessary to operate helicopter expedient refueling systems (HERS), or tactical airfield fuel dispensing systems (TAFDS). ADGR can also quickly resupply established forward-arming and refueling (FARP) sites and forward-operating bases (FOB). The capability of the CH-53K to operate as a tactical ground refueler enhances MAGTF operations. (ANTTP 3-22.3-KC-130)

Performance Standard. Plan and brief a tactical mission IAW ASTACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW ASTACSOP Magellan criteria. Arrive in LZ within +/- 30 sec of L-Hour and within 2 rotors of prebriefed landing point and or lead aircraft. Plan, brief and execute a tactical TBFDS refueling evolution. Calculate accurate fuel requirements; ensure aircraft integration and FARP site security.

Instructor. MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. ADGR-4981

Ordnance. Two .50 cal (TG and 500 rounds per weapon are optional).

Range Requirement. Live fire range as required.

External Syllabus Support. TBFDS system, escort, MMT and/or Command and Control aircraft are optional.

<b>MET-7007</b>	<b>1.5</b>	<b>730</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>2+</b>	<b>CH-53K</b>
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Goal. Demonstrate the capability to operate from Sea based sites. Marine aviation units maintain the capability to operate from Naval shipping (amphibious platforms, carriers, etc.) in line with platform and unit capabilities. (JP 3-0, MCWP 3-20)

Performance Standard. Plan, brief and execute a tactical mission to or from a sea based site or FCLP pad. Ensure aircrew properly plans for and demonstrate knowledge of the particulars of operating in the shipboard environment.

Instructor. MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. SEA-4982

Ordnance. 2 .50 cal (TG and 500 rounds per weapon are optional).

Range Requirement. Live fire range as required.

External Syllabus Support. Ship or FCLP pad as required.

## 2.22 AVIATION CAREER PROGRESSION MODEL (ACPM) PHASE

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

- Marine Air Command and Control System (MACCS)
- Aviation Ground Support
- Joint Air Operations
- ACE Battle Staff
- MAGTF
- Seabased Operations
- Combatant Commander Organizations

**General.** The ACPM is intended to be an integrated series of academic events contained within each phase of training. All ACPM classes are available on the MAWTS-1 NIPR website:

<https://MCALMS.usmc.mil>

On the MCALMS NIPR website, under course catalog tab, are all ACPM course categories. Under the category links, all the ACPM classes are in media site format.

The PTO or designated representative will then manually update MSHARP and the Pilot's APR Section III, Aircrew Ground School Training section using Enclosure 1 of this document.

Pilots who have previously completed classes listed under the ACPM syllabus may be given grandfather status and manually updated via MSHARP by the PTO or designated representative, at the discretion of the Squadron Commanding Officer. Additional applicability is IAW NAVMC 3500.14 Aviation T&R Program Manual, paragraph 2.11.

ACPM academic events are like any other academic event in that they serve as pre-requisites to selected flight events or stages. Several ACPM academic events are integrated as prerequisites for flight leadership syllabi. Squadron Commanding Officers shall ensure the requisite ACPM training requirements have been met prior to designating flight leaders. ACPM academic events, along with their identifying prerequisite association with other training phases/stages/events are listed below.

At the completion of each ACPM event, the appropriate training code shall be logged in M-SHARP by the squadron Pilot Training Officer (PTO) or designated representative, as appropriate. ACPM events do not have re-fly intervals.

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

## 2.23 AVIATION CAREER PROGRESSION MODEL (ACPM) STAGE

ACPM TO HMHT&R MATRIX				
STAGE	EVENT NUMBER	CLASS	ACPM DESCRIPTION	PREREQUISITE TO (PHASE/STAGE/EVENT)
ACPM	8201	(U)	MACCS AGENCIES, FUNCTIONS AND CONTROL OF AIRCRAFT AND MISSILES	2000 PHASE
ACPM	8202	(U)	TACTICAL AIR COMMAND CENTER (TACC)	2000 PHASE
ACPM	8203	(U)	DIRECT AIR SUPPORT CENTER (DASC)	2000 PHASE
ACPM	8204	(U)	TACTICAL AIR OPERATION CENTER (TAOC)	2000 PHASE
ACPM	8205	(U)	MARINE AIR TRAFFIC CONTROL (MATC)	3000 PHASE
ACPM	8206	(U)	LOW ALTITUDE AIR DEFENSE (LAAD)	3000 PHASE
ACPM	8208	(U)	MARINE WING COMMUNICATION SQUADRON (MWCS)	3000 PHASE
ACPM	8221	(U)	AVIATION OPERATIONS	3000 PHASE
ACPM	8222	(U)	CONTROL OF AIRCRAFT AND MISSILES	3000 PHASE
ACPM	8223	(U)	OFFENSIVE AIR SUPPORT (OAS)	3000 PHASE
ACPM	8224	(U)	ASSAULT SUPPORT	3000 PHASE
ACPM	8225	(U)	AIR RECONNAISSANCE	3000 PHASE
ACPM	8226	(U)	ELECTRONIC WARFARE	3000 PHASE
ACPM	8227	(U)	ANTI-AIR WARFARE	3000 PHASE
ACPM	8228	(U)	AVIATION GROUND SUPPORT (AGS)	3000 PHASE

ACPM TO HMH T&R MATRIX				
STAGE	EVENT NUMBER	CLASS	ACPM DESCRIPTION	PREREQUISITE TO (PHASE/STAGE/EVENT)
ACPM	8341	(U)	SURFACE TO AIR MISSILES (SAM) THREAT	DM STAGE
ACPM	8342	(U)	FIXED WING THREAT	DM STAGE
ACPM	8343	(U)	ROTARY WING THREAT	DM STAGE
ACPM	8361	(U)	GROUND COMBAT OPERATIONS	CAT-3140
ACPM	8362	(U)	FIRE SUPPORT COORDINATION IN THE GCE	CAT-3140
ACPM	8363	(U)	MAGTF COMMAND AND CONTROL	CAT-3140
ACPM	8364	(U)	MAGTF COMMUNICATIONS	CAT-3140
ACPM	8365	(U)	PHASING CONTROL ASHORE	AD-3240
ACPM	8366	(U)	INFORMATION MANAGEMENT	CAT-3140
ACPM	8367	(U)	UNMANNED AIRCRAFT SYSTEMS (UAS) SUPPORT TO THE MAGTF	CAT-3140
ACPM	8661	(U)	COMMAND & CONTROL OF JOINT AIR OPERATOINS	SL STAGE
ACPM	8662	(U)	THEATER AIR GROUND SYSTEMS (TAGS)	SL STAGE
ACPM	8663	(U)	JOINT FIRE SUPPORT	SL-STAGE
ACPM	8664	(U)	CLOSE AIR SUPPORT (CAS)	SL STAGE
ACPM	8685	(U)	JOINT TARGETING	FL-6400
ACPM	8686	(U)	NORTH ATLANTIC TREATY ORGANIZATION (NATO)	FL-6400
ACPM	8687	(U)	JOINT AIRSPACE CONTROL	FL-6400
ACPM	8688	(U)	COUNTERING AIR AND MISSILE THREATS	DL STAGE

2.24 ELECTRONIC AIRCREW TRAINING FORM (EATF) REASON CODES

CH-53K EATF REASON CODES							
Reason Code Category Description	Syllabus Name	Reason	Change	Update Reason Code Category Description	Update Syllabus Name	Update Reason	Po Notes
CRM	CH-53K Pilot	Decision Making					
CRM	CH-53K Pilot	Adaptability / Flexibility					
CRM	CH-53K Pilot	Assertiveness					
CRM	CH-53K Pilot	Communication					
CRM	CH-53K Pilot	Leadership					
CRM	CH-53K Pilot	Mission Analysis					
CRM	CH-53K Pilot	Situational Awareness					
DND	CH-53K Pilot	Aircraft					
DND	CH-53K Pilot	Instructor					
DND	CH-53K Pilot	Not Required					
DND	CH-53K Pilot	Time					
DND	CH-53K Pilot	Weather					
OTHER	CH-53K Pilot	Other Resource					
Briefing/Knowledge	CH-53K Pilot	Instructor Skill/Technique					
Briefing/Knowledge	CH-53K Pilot	Limitations					
Briefing/Knowledge	CH-53K Pilot	NATOPS Brief					
Briefing/Knowledge	CH-53K Pilot	NATOPS, MDG, NTTP					
Briefing/Knowledge	CH-53K Pilot	SOPs					
Briefing/Knowledge	CH-53K Pilot	Systems					
CRM	CH-53K Pilot	Instructor Skill/Technique					
DND	CH-53K Pilot	Hotseat					
Flight Skills (PAC)	CH-53K Pilot	Airspeed Control					
Flight Skills (PAC)	CH-53K Pilot	Altitude Control					
Flight Skills (PAC)	CH-53K Pilot	Attitude Control					
Flight Skills (PAC)	CH-53K Pilot	Closure Rate					
Flight Skills (PAC)	CH-53K Pilot	Dash-2 Position Control					
Flight Skills (PAC)	CH-53K Pilot	Descent Rate					
Flight Skills (PAC)	CH-53K Pilot	Drift Control					
Flight Skills (PAC)	CH-53K Pilot	EPs					
Flight Skills (PAC)	CH-53K Pilot	Flight Control Inputs					
Flight Skills (PAC)	CH-53K Pilot	Glideslope Control					
Flight Skills (PAC)	CH-53K Pilot	Heading Control					
Flight Skills (PAC)	CH-53K Pilot	Scan					
Flight Skills (PAC)	CH-53K Pilot	Instructor Skill/Technique					
Flight Skills (PAC)	CH-53K Pilot	Radio Calls					
Flight Skills (PNAC)	CH-53K Pilot	Checklists					
Flight Skills (PNAC)	CH-53K Pilot	Cockpit Setup					
Flight Skills (PNAC)	CH-53K Pilot	Descent Rate					
Flight Skills (PNAC)	CH-53K Pilot	EPs					
Flight Skills (PNAC)	CH-53K Pilot	Instrument Crosscheck					
Flight Skills (PNAC)	CH-53K Pilot	Instructor Skill/Technique					
Mission Planning	CH-53K Pilot	Instructor Skill/Technique					
Mission Planning	CH-53K Pilot	Route Planning / Map Preparation					
Mission Planning	CH-53K Pilot	Smart Pack items					
Mission Planning	CH-53K Pilot	Weight and power calculation					
Mission Systems	CH-53K Pilot	FLIR usage					
Mission Systems	CH-53K Pilot	GPS usage					
Mission Systems	CH-53K Pilot	Instructor Skill/Technique					
Mission Systems	CH-53K Pilot	Navigation Equipment / Switchology					
Mission Systems	CH-53K Pilot	NVG usage					
Mission Systems	CH-53K Pilot	Radio Usage					

CH-53K EATF REASON CODES							
Reason Code Category Description	Syllabus Name	Reason	Change	Update Reason Code Category Description	Update Syllabus Name	Update Reason	Po Notes
CRM	CH-53K Crew Chief	Decision Making					
CRM	CH-53K Crew Chief	Adaptability / Flexibility					
CRM	CH-53K Crew Chief	Assertiveness					
CRM	CH-53K Crew Chief	Communication					
CRM	CH-53K Crew Chief	Leadership					
CRM	CH-53K Crew Chief	Mission Analysis					
CRM	CH-53K Crew Chief	Situational Awareness					
DND	CH-53K Crew Chief	Aircraft					
DND	CH-53K Crew Chief	Instructor					
DND	CH-53K Crew Chief	Not Required					
DND	CH-53K Crew Chief	Time					
DND	CH-53K Crew Chief	Weather					
OTHER	CH-53K Crew Chief	Other Resource					
Briefing	CH-53K Crew Chief	Mission Brief / Debrief					
DND	CH-53K Crew Chief	Other Resource					
DND	CH-53K Crew Chief	Student Performance					
Execution	CH-53K Crew Chief	Egress					
Execution	CH-53K Crew Chief	Landing					
Execution	CH-53K Crew Chief	Objective Area					
Execution	CH-53K Crew Chief	Shutdown					
Execution	CH-53K Crew Chief	Start-up					
Execution	CH-53K Crew Chief	Troubleshooting					
Knowledge-Equipment	CH-53K Crew Chief	Limitations					
Knowledge-Equipment	CH-53K Crew Chief	NATOPS, MDG, NTTP					
Knowledge-Equipment	CH-53K Crew Chief	SOP's, Policies, and Instructions					
Knowledge-Equipment	CH-53K Crew Chief	Systems Knowledge					
Preflight	CH-53K Crew Chief	ADB					
Preflight	CH-53K Crew Chief	Inspection					
Preflight	CH-53K Crew Chief	Servicing					
Preflight	CH-53K Crew Chief	Time Management					
Preflight	CH-53K Crew Chief	Troubleshooting					
Skills	CH-53K Crew Chief	Checklists and Flows					
Skills	CH-53K Crew Chief	Communication / Std terminology					
Skills	CH-53K Crew Chief	Depth Perception					
Skills	CH-53K Crew Chief	Drift Corrections					
Skills	CH-53K Crew Chief	EPs					
Skills	CH-53K Crew Chief	Obstacle Avoidance					
Skills	CH-53K Crew Chief	Wingman/Traffic calls					

2.25 T&R SYLLABUS MATRIX. The below matrix summarizes T&R syllabus event Information



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CH-53K PILOT T&R MATRIX (1000 & 5000 PHASE)																				
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	MR	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES
CORE SKILL INTRODUCTION (1000 PHASE)																				
COMPUTER BASED TRAINING (CBT), ACADEMICS (ACAD), & LAB (LAB) STAGE																				
ACAD	CBT	0001	INTRO TO THE CH-53K	X	X	X	X	X		1.0						G		486		
	CBT	0002	POWER PLANTS	X	X	X	X	X		2.0						G		486	0001	
	CBT	0003	ROTOR SYSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0004	TRANSMISSION SYSTEM	X	X	X	X	X		1.5						G		486	0001	
	CBT	0005	FUEL SYSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0006	SECONDARY POWER SYTSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0007	ELECTRICAL SYSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0008	LIGHTING SYSTEMS	X	X	X	X	X		0.5						G		486	0001	
	CBT	0009	HYDRAULIC POWER SYSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0010	FLIGHT CONTROL SYSTEM	X	X	X	X	X		2.0						G		486	0001	
	CBT	0011	LANDING GEAR SYSTEM	X	X	X	X	X		0.5						G		486	0001	
	CBT	0012	BLADE/PYLON FOLD SYSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0013	AVIONICS MANAGEMENT SYSTEMS	X	X	X	X	X		1.5						G		486	0001	
	CBT	0014	NAVIGATION SYSTEMS	X	X	X	X	X		2.0						G		486	0001	
	CBT	0015	INTEGRATED VEHICLE HEALTH MANAGEMENT SYSTEM	X	X	X	X	X		1.0						G		486	0001	
	CBT	0016	WARNINGS, CAUTIONS, AND ADVISORIES	X	X	X	X	X		0.5						G		486	0001	
	CBT	0017	AIRCRAFT FURNISHINGS AND MISSION SYSTEMS	X	X	X	X	X		1.0						G		486	0001	
	CBT	0018	COMMUNICATIONS SYSTEMS	X	X	X	X	X		1.0						G		486	0001	
	CBT	0019	FIRE PROTECTOIN AND EMERGENCY SYSTEMS	X	X	X	X	X		1.0						G		486	0001	
	CBT	0020	AIRCRAFT SURVIVABILITY EQUIPMENT (ASE)	X	X	X	X	X		1.0						G		486	0001	
	CBT	0021	AIRCRAFT PREFLIGHT INSPECTION	X	X	X	X	X		1.0						G		486	0001	
	CBT	0022	WEIGHT AND POWER	X	X	X	X	X		0.5						G		486	0001	
	CBT	0023	AIRCRAFT STARTUP AND SHUTDOWN CHECKLIST	X	X	X	X	X		1.0						G		486	0001	
	CBT	0024	INTRO TO FAMILIARIZATIONS FLIGHT STAGE/LOCAL CR	X	X	X	X	X		0.5						G		486	0001	
	CBT	0025	INTRO TO FORMATION FLIGHT STAGE	X	X	X	X	X		0.5						G		486	0001	
	CBT	0026	INTRO TO THE CONFINED AREA LANDING STAGE	X	X	X	X	X		0.5						G		486	0001	
	CBT	0027	INTRO TO THE EXTERNAL CARGO OPERATIONS STAGE	X	X	X	X	X		0.5						G		486	0001	
	CBT	0028	INTRO TO THE TERRAIN FLIGHT STAGE	X	X	X	X	X		0.5						G		486	0001	
	ACAD	0100	GROUND SCHOOL INTRO IN-BRIEF	X	X	X	X	X		0.5						G		486	0001	
	ACAD	0101	INTRO TO THE CH-53K	X	X	X	X	X		1.0						G		486	0001	
	ACAD	0102	POWER PLANTS	X	X	X	X	X		2.0						G		486	0002	
	ACAD	0103	ROTOR SYSTEM	X	X	X	X	X		1.5						G		486	0003	
	ACAD	0104	TRANSMISSION SYSTEM	X	X	X	X	X		1.5						G		486	0004	
ACAD	0105	FUEL SYSTEM	X	X	X	X	X		1.0						G		486	0005		
ACAD	0106	SECONDARY POWER SYTSTEM	X	X	X	X	X		1.0						G		486	0006		
ACAD	0107	ELECTRICAL SYSTEM	X	X	X	X	X		1.0						G		486	0007		
ACAD	0108	LIGHTING SYSTEMS	X	X	X	X	X		0.5						G		486	0008		
ACAD	0109	HYDRAULIC POWER SYSTEM	X	X	X	X	X		1.5						G		486	0009		
ACAD	0110	FLIGHT CONTROL SYSTEM	X	X	X	X	X		3.0						G		486	0010		

## CH-53K PILOT T&amp;R MATRIX (1000 &amp; 5000 PHASE)

SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	MR	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES
	ACAD	0111	LANDING GEAR SYSTEM	X	X	X	X	X		0.5						G		486	0011	
	ACAD	0112	BLADE/PYLON FOLD SYSTEM	X	X	X	X	X		0.5						G		486	0012	
	ACAD	0113	AVIONICS MANAGEMENT SYSTEMS	X	X	X	X	X		1.0						G		486	0013	
	ACAD	0114	NAVIGATION SYSTEMS	X	X	X	X	X		2.0						G		486	0014	
	ACAD	0115	INTEGRATED VEHICLE HEALTH MANAGEMENT SYSTEM	X	X	X	X	X		1.0						G		486	0015	
	ACAD	0116	WARNINGS, CAUTIONS, AND ADVISORIES	X	X	X	X	X		0.5						G		486	0016	
	ACAD	0117	AIRCRAFT FURNISHINGS AND MISSION SYSTEMS	X	X	X	X	X		1.5						G		486	0017	
	ACAD	0118	COMMUNICATIONS SYSTEMS	X	X	X	X	X		1.0						G		486	0018	
	ACAD	0119	FIRE PROTECTION AND EMERGENCY SYSTEMS	X	X	X	X	X		0.5						G		486	0019	
	ACAD	0120	AIRCRAFT SURVIVABILITY EQUIPMENT (ASE)	X	X	X	X	X		1.0						G		486	0020	
	ACAD	0122	WEIGHT AND POWER	X	X	X	X	X		1.0						G		486	0022	
	ACAD	0123	AIRCRAFT STARTUP AND SHUTDOWN CHECKLIST	X	X	X	X	X		2.0						G		486	0023	
	ACAD	0124	INTRO TO FLIGHT STAGE / LOCAL COURSE RULES	X	X	X	X	X		2.0						G		486	0024	
	ACAD	0130	INTRO TO JMPS	X	X	X	X	X		4.0						G		486	0124	
	ACAD	0131	JMPS UPC VFR ROUTE PLANNING	X	X	X	X	X		3.0						G		486	0130	
	ACAD	0132	JMPS UPC CARGO PLANNING	X	X	X	X	X		3.0						G		486	0131	
	ACAD	0133	JMPS UPC ADDITIONAL PLANNING	X	X	X	X	X		3.0						G		486	0132	
	ACAD	0134	JMPS UPC IFR/RNAV ROUTE PLANNING	X	X	X	X	X		3.0						G		486	0131	
	LAB	1001	AIRCRAFT SYSTEMS I	X	X	X	X	X		1.0						S		486	0123	
	LAB	1002	AIRCRAFT SYSTEMS II	X	X	X	X	X		1.0						S		486	1001	
	LAB	1003	AIRCRAFT SYSTEMS III	X	X	X	X	X		1.0						S		486	1002	
	LAB	1004	AIRCRAFT SYSTEMS IV	X	X	X	X	X		1.0						S		486	1003	
	LAB	1013	AVIONICS MANAGEMENT SYSTEMS	X	X	X	X	X		1.5						S		486	0113	
	LAB	1014	NAVIGATION SYSTEMS	X	X	X	X	X		1.5						S		486	0114	
	LAB	1017	AIRCRAFT FURNISHINGS AND MISSION SYSTEMS	X	X	X	X	X		2.0						G		486	0117	
	LAB	1018	COMMUNICATIONS SYSTEMS	X	X	X	X	X		1.5						S		486	0118	
	LAB	1021	REVIEW PREFLIGHT INSPECTION I	X	X	X	X	X		5.0						G		486	0021	
	LAB	1022	REVIEW PREFLIGHT INSPECTION II	X	X		X	X		5.0						G		486	1021	
	LAB	1030	INTRO TO JMPS	X	X	X	X	X		4.0						G		486		
	LAB	1031	JMPS UPC VFR ROUTE PLANNING	X	X	X	X	X		2.0						G		486	0131	
	LAB	1032	JMPS UPC CARGO PLANNING	X	X	X	X	X		2.0						G		486	0132	
	LAB	1033	JMPS UPC ADDITIONAL PLANNING	X	X	X	X	X		2.0						G		486	0133	
	LAB	1034	JMPS UPC IFR/RNAV ROUTE PLANNING	X	X	X	X	X		2.0						G		486	0134	
TOTAL CBT, ACAD, & LAB STAGE									72	105.0	0	0.0	0	0.0						

CH-53K PILOT T&R MATRIX (1000 & 5000 PHASE)																					
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	MR	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	
FAMILIARIZATION (FAM) STAGE																					
FAM	SFAM	1100	INTRO COCKPIT PROC	X	X	X	X					2.0			D	S	1	486	1031		
	SFAM	1101	INTRO TO GROUND EMERGENCIES	X		X						2.0			D	S	1	*	1100		
	SFAM	1102	INTRO TO BASIC AIRWORK AND FLIGHT CONT MODES	X		X						2.0			D	S	1	*	1101		
	SFAM	1103	INTRO TO PATTERN WORK / TAKEOFF / LANDING	X		X						2.0			D	S	1	*	1102		
	SFAM	1104	INTRO TO IN-FLIGHT EMERGENCIES I	X	X	X	X					2.0			D	S	1	486	1103		
	SFAM	1105	INTRO TO IN-FLIGHT EMERGENCIES II	X		X						2.0			D	S	1	*	1104		
	SFAM	1106	INTRO TO CRM SKILLS	X								2.0			D	S	1	*	1105		
	SFAM	1107	SIM PROGRESS CHECK	X	X		X					2.0			D	S	1	486	1106		
	FAM	1108	INTRO TO GROUND OPERATIONS	X											1.0	D	A	1	*	1107	
	FAM	1109	INTRO TO HOVER AND LOW WORK	X		X									1.0	D	A	1	*	1108	
	FAM	1110	INTRO TO FORWARD FLIGHT	X											1.0	D	A	1	*	1109	
	FAM	1111	INTRO TO PATTERN WORK & NORM TAKEOFF / LAND	X											2.0	D	A	1	*	1110	
	FAM	1112	INTRO TO OEI TRAINING / RUNNING TAKEOFF / LAND	X		X									1.5	D	A	1	*	1111	
	FAM	1113	INTRO TO HIGH AOB MANEUVERS & AUTOS	X	X	X	X								1.5	D	A	1	486	1112	
	FAM	1114	FAM MANEUVERS AND EP REVIEW I	X											2.0	D	A	1	*	1113	
	FAM	1115	FAM MANEUVERS AND EP REVIEW II	X											2.0	D	A	1	*	1114	
	FAM	1116	FAM MANUEVERS AND EP REVIEW III	X	X	X	X								2.0	D	A	1	486	1115	
	FAM	1117	FAM PROGRESS CHECK	X	X	X	X								2.0	D	A	1	486	1116	
	SFAM	1200	NS ADAPTATION	X		X							2.0			HLL	S	1	*	1107	
	FAM	1201	INTRO NS LOW AND PATTERN WORK	X											1.5	HLL	A	1	*	1200	
	FAM	1202	PRACTICE NS LOW AND PATTERN WORK	X	X	X	X								1.5	HLL	A	1	486	1201	
TOTAL FAM STAGE									0	0.0	9	18.0	12	19.0							
INSTRUMENT (INST) STAGE																					
INST	SINST	1300	INTRO BASIC INSTRUMENTS AND FLIGHT DIRECTOR	X		X						2.0			(N)	S	1	*	1112		
	SINST	1301	RADIO INSTRUMENTS I (TACAN/VOR)	X	X	X						1.0			(N)	S	1	730	1300		
	SINST	1302	RADIO INSTRUMENTS II (ILS/LOCALIZER)	X	X	X						1.0			(N)	S	1	730	1301		
	SINST	1303	RADIO INSTRUMENTS III (GPS/RNP/RNAV)	X	X	X						1.0			(N)	S	1	730	1302		
	SINST	1304	RADAR APPROACHES & LOST COMM PROCEDURES	X								1.0			(N)	S	1	*	1303		
	SINST	1305	SIM INSTRUMENT PROGRESS CHECK	X	X							2.0			(N)	S	1	730	1304		
	INST	1306	INSTRUMENT FLIGHT REVIEW	X	X									1.5	(N)	A	1	730	1305		
	INST	1307	INSTRUMENT PROGRESS CHECK	X	X	X	X							1.5	(N)	A	1	486	1306		
TOTAL INST STAGE									0	0.0	6	8.0	2	3.0							
NAVIGATION (NAV) STAGE																					
NAV	SNAV	1400	INTRO TO VFR NAVIGATION	X	X		X					2.0			D	S	1	486	1300		
	SNAV	1401	VFR ROUTE AND FLIR NAVIGATION	X	X	X						2.0			D	S	1	730	1400		
	NAV	1402	VFR NAV PROGRESS CHECK	X		X								1.5	D	A	1	*	1401		
TOTAL NAV STAGE									0	0.0	2	4.0	1	1.5							

CH-53K PILOT T&R MATRIX (1000 & 5000 PHASE)																				
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	MR	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES
FORMATION (FORM) STAGE																				
FORM	SFORM	1500	INTRO DAY FORM	X								1.0			D	S	2	*	1117	
	FORM	1501	INTRO PARADE, CRUISE AND SEC LANDING	X	X	X	X							1.5	D	A	2	486	1500	
	SFORM	1502	INTRO NS FORMATION FLIGHT	X								1.0			HLL	S	2	*	1500	
	FORM	1503	NS FORM FLIGHT	X		X								1.5	HLL	A	2	*	1502	
TOTAL FORM STAGE									0	0.0	2	2.0	2	3.0						
CONFINED AREA LANDING (CAL)STAGE																				
CAL	SCAL	1600	INTRO TO CALS	X		X						1.0			D	S	1	*	1117	
	SCAL	1601	INTRO TO SEC CALS	X								1.0			D	S	2	*	1600	
	CAL	1602	INTRO TO CALS	X		X								1.5	D	A	1	*	1601	
	CAL	1603	INTRO TO CPLD APPCH & DECEL TO HVR IN CAL ENVT	X	X	X	X							1.5	D	A	1	486	1602	
	CAL	1604	INTRO TO SEC CALS	X	X		X							1.5	D	A	2	486	1503	
	SCAL	1605	INTRO TO NS CALS	X		X							2.0		HLL	S	1	*	1202,1602	
	SCAL	1606	INTRO TO NS SEC CALS	X									1.0		HLL	S	2	*	1605	
	CAL	1607	INTRO TO NS CALS	X		X								1.5	HLL	A	1	*	1202,1606	
CAL	1608	INTRO NS SECTION CALS	X	X									1.5	HLL	A	2	730	1607		
TOTAL CAL STAGE									0	0.0	4	5.0	5	7.5						
EXTERNAL (EXT) STAGE																				
EXT	SEXT	1700	INTRO SINGLE AND DUAL POINTS	X	X	X	X					2.0			D	S	1	486	1601	
	EXT	1701	INTRO SINGLE POINT	X		X								1.5	D	A	1	*	1700	
	EXT	1702	INTRO DUAL POINT	X	X		X							1.5	D	A	1	486	1700	
	EXT	1703	INTRO NS SINGLE POINT	X										1.5	HLL	A	1	*	1608,1701	
	EXT	1704	INTRO NS DUAL POINT	X	X	X								1.5	HLL	A	1	730	1608,1702	
TOTAL EXT STAGE									0	0.0	1	2.0	4	6.0						
TERRAIN FLIGHT (TERF) STAGE																				
TERF	STERF	1800	INTRO TERF MANEUVERS	X								1.0			D	S	1	*	1601	
	TERF	1801	INTRO TERF	X	X	X								1.5	D	A	1	730	1604	
TOTAL TERF STAGE									0	0.0	1	1.0	1	1.5						
CORE INTRODUCTION REVIEW (REV) STAGE																				
REV	SREV	1900	REVIEW H2P TRAINING	X	X	X						2.0			D	S	1	730	ALL PREVIOUS CODES	
TOTAL REV STAGE									0	0.0	1	2.0	0	0.0						
CORE INTRODUCTION EVALUATION (CSIX) STAGE																				
CSIX	CSIX	1902	H2P CHECK	X	X	X	X							1.5	D	A	1	486	1900,6000-6002	
TOTAL H2P STAGE									0	0.0	0	0.0	1	1.5						
TOTAL CORE SKILL INTRODUCTION PHASE									72	105.0	26	42.0	28	43.0						
REFRESHER AND MODIFIED REFRESHER MIRROR CODE (RCQD)																				
RCQD	RCQD	1999	REFRESHER & MODIFIED REFRESHER MIRROR UPDATE CODE																	DATE LAST FLOWN MIRROR UPDATE FOR R & MR CODES

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CH-53K PILOT T&R MATRIX (1000 & 5000 PHASE)																				
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	MR	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES
INSTRUCTOR TRAINING (5000 PHASE)																				
ACADEMICS STAGE (ACAD)																				
ACAD	ACAD	5180	INSTRUCTIONAL TECHNIQUES	X						1.0						G		*		
TOTAL ACAD STAGE									1	1.0	0	0.0	0	0.0						
FLEET REPLACEMENT SQUADRON INSTRUCTOR STAGE (FRSI)																				
FRSI	FRSI-E	5500	FRSI UT DAY FAM	X										1.5	D	A	1	*	6203,5202	
	SFRSI-E	5501	FRSIUT SIM REV	X								2.0			D	S	1	*	6203,5202	
	FRSI-E	5502	FRSI UT INSTR	X										2.0	(N)	S/A	1	*	6203,5202	
	FRSI-E	5503	FRSI UT DAY CAL	X										1.5	D	A	1	*	5500	
	FRSI-E	5504	FRSI UT DAY FORM	X										1.5	D	A	2	*	5500	
	FRSI-E	5505	FRSI UT EXT	X										1.5	D	A	1	*	5500	
	FRSI-E	5506	FRSI CHECK	X	X									1.5	(N)	A	1	*	5500-5505	
TOTAL FRSI STAGE									0	0.0	1	2.0	6	9.5						
CORE SKILL INTRODUCTORY INSTRUCTOR STAGE (CSII)																				
CSII	CSII	5509	CSII CHECK	X	X	X								1.0	(N)	A	1	*	6122	
TOTAL CSII STAGE									0	0.0	0	0.0	1	1.0						
NIGHT SYSTEM FAMILIARIZATION INSTRUCTOR STAGE (NSFI)																				
NSFI	NSFI	5600	NSFI UT HLL NS FAM	X										1.5	NS	A	1	*	COURSE CATALOG	
	NSFI	5601	NSFI UT HLL NS FORM	X										1.5	NS	A	2	*	COURSE CATALOG	
	NSFI	5602	NSFI UT HLL EXT	X										1.5	NS	A	1	*	COURSE CATALOG	
	NSFI	5603	NSFI CHECK	X	X									1.5	NS	A	1	*	COURSE CATALOG	
TOTAL NSFI STAGE									0	0.0	0	0.0	4	6.0						

## CH-53K PILOT T&amp;R MATRIX (1000 &amp; 5000 PHASE)

SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	MR	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES
CI SIMULATOR FAM STAGE (SFAM)																				
CI	CI	5900	INTRO TO GROUND OPERATIONS					X				1.0			D	S	1	*	CBT AND ACAD COMP	
	CI	5901	INTRO TO GROUND EMERGENCIES					X				1.0			D	S	1	*	5900	
	CI	5902	INTRO TO IN-FLIGHT EMERGENCIES I					X				1.0			D	S	1	*	5901	
	CI	5903	INTRO TO IN-FLIGHT EMERGENCIES II					X				1.0			D	S	1	*	5902	
	CI	5904	INTRO CRM SKILLS					X				1.0			D	S	1	*	5903	
	CI	5905	PROGRESS CHECK					X				1.0			D	S	1	*	5904	
	CI	5906	INTRO TO HOVER AND LOW WORK					X				1.0			D	S	1	*	5905	
	CI	5907	INTRO TO PATTERN WORK & NORM TAKEOFF / LAND					X				1.0			D	S	1	*	5906	
	CI	5908	INTRO TO OEI TRAINING / RUNNING TAKEOFF / LAND					X				1.0			D	S	1	*	5907	
	CI	5909	FAM MANEUVERS AND EP REVIEW III					X				2.0			D	S	1	*	5908	
	CI	5910	PRACTICE NS LOW AND PATTERN WORK					X				1.0			N	S	1	*	5909	
	CI	5911	INTRO TO BASIC INSTRUMENTS AND FLIGHT DIRECTOR					X				1.0			D	S	1	*	5910	
	CI	5912	RADIO INSTRUMENTS I & II					X				1.5			D	S	1	*	5911	
	CI	5913	INSTRUMENT FLIGHT REVIEW					X				1.0			D	S	1	*	5912	
	CI	5914	VFR ROUTE AND FLIR NAVIGATION					X				1.0			D	S	1	*	5913	
	CI	5915	INTRO TO PARADE, CRUISE, SECTION LANDINGS					X				1.0			D	S	1	*	5914	
	CI	5916	NS FORM FLIGHT					X				1.0			N	S	1	*	5915	
	CI	5917	INTRO TO CPLD APPCH & DECEL TO HVR IN CAL ENVT					X				1.0			D	S	1	*	5916	
	CI	5918	INTRO TO SECTION CALS					X				1.0			D	S	1	*	5917	
	CI	5919	INTRO TO NS SECTION CALS					X				1.0			D	S	1	*	5918	
	CI	5920	INTRO TO SINGLE AND DUAL PT EXT					X				1.5			D	S	1	*	5919	
	CI	5921	INTRO TO NS DUAL PT EXT					X				1.0			D	S	1	*	5920	
	CI	5922	INTRO TERF					X				1.0			D	S	1	*	5921	
	CI	5923	REVIEW CIUT					X				1.0			D	S	1	*	5922	
	CI	5924	CIUT CHECK					X				1.0			D	S	1	*	5923	
	CI	5931	IP BRIEF					X				1.0			D	S	1	*	5924	
	CI	5932	REVIEW FAM MANEUVERS					X				1.0			D	S	1	*	5931	
	CI	5933	REVIEW BI, AIRWAY NAV					X				1.0			D	S	1	*	5932	
	CI	5934	REVIEW CAL					X				1.0			D	S	1	*	5933	
	CI	5935	REVIEW FORM					X				1.0			D	S	1	*	5934	
	CI	5936	REV EXT OPS					X				1.0			D	S	1	*	5935	
	CI	5937	STAN CHECK					X				1.0			D	S	1	*	5936	
TOTAL CONTRACT INSTRUCTOR CI FRS STAGE									0	0.0	32	34.0	0	0.0						

2.25.2 CH-53K PILOT T&R MATRIX (2000-8000 PHASES)

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
CH-53K T&R MATRIX (2000 - 8000 PHASE)																							
ACADEMIC STAGE (ACAD) & LAB STAGE																							
ACAD	ACAD	2180	CH-53K GPS TACTICAL ROUTE PLANNING	X	X	X	X		1.0						G			365					
	ACAD	2181	CH-53K MULTI FUNCTION DISPLAY (MFD)	X	X	X	X		1.0						G			365					
	ACAD	2182	CH-53K ARC-210 HAVEQUICK/SINGARS	X	X	X	X		1.0						G			365					
	ACAD	2183	CH-53K JMPS CARGO PLANNING TOOL / INTERNAL CARGO	X	X	X	X		1.0						G			365					
	ACAD	2184	CH-53K FLIR	X	X	X	X		1.0						G			365					
	ACAD	2185	AN/AVS-7 CH-53 ANVIS HUD	X	X		X		1.0						G			365					
	ACAD	2186	CH-53 TACFORM	X					1.0						G			*					
	ACAD	2280	DESERT AREA OPERATIONS	X	X		X		1.0						G			365					
	ACAD	2281	MOUNTAIN OPERATIONS	X	X		X		1.0						G			365					
	ACAD	2282	TECHNIQUES IN A REDUCED VISIBILITY LANDING	X	X	X	X		1.0						G			365					
	ACAD	2380	ASD TERRAIN FLIGHT (TERF)	X					1.0						G			*					
	ACAD	2480	HEAVY LIFT OPERATIONS (EXT)	X	X		X		1.0						G			365					
	ACAD	2481	ASSAULT SUPPORT TO ARTILLERY	X					1.0						G			*					
	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X		1.0						G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X		1.0						G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X		1.0						G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM (*)	X	X	X	X		1.0						G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X		1.0						G			365					
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X		1.0						G			365					
	ACAD	2586	RF SAM (*)	X	X		X		1.0						G			365					
	ACAD	2587	RADAR PRINCIPLES (*)	X					1.0						G			*					
	ACAD	2588	CH-53 DM/GTR I (GTR)	X					1.0						G			*					
	ACAD	2589	SURFACE TO AIR THREAT TO THE MAGTF (*)	X					1.0						G			*					
	ACAD	2680	HAAR (AR)	X	X		X		1.0						G	X		365					
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X		1.0						G			365					
	ACAD	2980	OBJECTIVE AREA PLANNING (TAC)	X	X		X		1.0						G			365					
	ACAD	2981	ROE (*)	X					1.0						G			*					
	ACAD	2982	EXECUTION CHECKLIST	X					1.0						G			*					



CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
	ACAD	2983	PROBLEM FRAMING	X					1.0						G			*					
	ACAD	2984	ASSAULT SUPPORT ESCORT TACTICS (*)	X					1.0						G			*					
	ACAD	2190	ASSAULT AN/ANV-9 COMPONENTS AND PREFLIGHT PROCEDURES	X					1.0						G			*					
	ACAD	2191	NVG SYSTEMS AND IMAGE CHARACTERISTICS	X					1.0						G			*					
	ACAD	2192	THE NIGHT OPERATIONAL ENVIRONMENT	X					1.0						G			*					
	ACAD	2193	NVG MISPERCEPTIONS AND ILLUSIONS	X					1.0						G			*					
	ACAD	2194	NVD ROUTE PLANNING CONSIDERATIONS	X					1.0						G			*					
	ACAD	2195	NIGHT OPERATIONS AND PLANNING AIDS	X					1.0						G			*					
	ACAD	2196	HUMAN FACTORS	X					1.0						G			*					
	ACAD	2197	CIRCADIAN RHYTHM AND FATIGUE	X					1.0						G			*					
	ACAD	2198	INTRO TO NVG TACTICAL EMPLOYMENT	X					1.0						G			*					
	ACAD	2199	BATTLEFIELD ILLUMINATION AND ITG PLANNING CONSID	X					1.0						G			*					
TOTAL ACAD STAGE								40	40.0	0	0.0	0	0.0										
FAMILIARIZATION / INSTRUMENT STAGE (FAM/INST)																							
FAM	ACAD	2180	CH-53K GPS TACTICAL ROUTE PLANNING	X	X	X	X								G			365					
	ACAD	2181	CH-53K MULTI FUNCTION DISPLAY (MFD)	X	X	X	X								G			365					
	ACAD	2182	CH-53K ARC-210 HAVEQUICK/SINGARS	X	X	X	X								G			365					
	ACAD	2183	CH-53K JMPS CARGO PLANNING TOOL / INTERNAL CARGO	X	X	X	X								G			365					
	ACAD	2184	CH-53K FLIR	X	X	X	X								G			365					
	ACAD	2185	AN/AVS-7 CH-53 ANVIS HUD	X	X		X								G			365					
	SFAM	2100	FAM, INST, EP SIM	X	X	X	X				2.0			(N)	S/A	1		90	1902				
	SFAM	2101	AIRCRAFT MANAGEMENT / NAV SYSTEMS SIM	X	X						2.0			(N)	S/A	1		365	2180,2181,2182,2183,2184,2185,2100				
	SFAM	2102	FLIGHT CONTROL MODES SIM	X	X	X					2.0			(N)	S/A	1		*	2101				
	FAM	2103	FAM, INSTR, EP	X	X	X	X						1.5	(N)	A	1		365	2102		2101		
FAM	2104	FLIGHT CONTROL MODES	X	X		X						1.5	D	A	1		365	2103					
TOTAL FAM/INST STAGE								0	0.0	3	6.0	2	3.0										
FORMATION STAGE (FORM)																							
FORM	ACAD	2186	CH-53 TACFORM	X											G			*					
	SFORM	2110	DAYFORM SIM	X							2.0			D	S	2		*	2186,2102				
	FORM	2115	TACFORM	X	X	X	X						1.5	(NS)	A	2		180	2104, 2110		2103		
TOTAL FORM STAGE								0	0.0	1	2.0	1	1.5										

CH-53K PILOT T &R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
CONFINED AREA LANDING STAGE (CAL)																							
CAL	ACAD	2280	DESERT AREA OPERATIONS	X	X		X								G			365					
	ACAD	2281	MOUNTAIN OPERATIONS	X	X		X								G			365					
	ACAD	2282	TECHNIQUES IN A REDUCED VISIBILITY LANDING	X	X	X	X								G			365					
	SMAL	2200	MOUNTAINOUS AREA LANDING SIM	X							1.0			D	S/A	1		*	2281,2102		2281		
	SRVL	2201	REDUCED VISIBILITY LANDINGS SIM	X	X	X	X				2.0			D	S	2		365	2180,2182,2200		2280,2282		
	CAL	2210	CAL	X									2.0	D	A	1		*	2104,2200				
	CAL	2211	SECTION CAL / RVL	X	X	X	X						2.0	D	A	2		365	2115,2201,2210		2103,2201,2281,2280		
TOTAL CAL STAGE								0	0.0	2	3.0	2	4.0										
TERRAIN FLIGHT STAGE (TERF)																							
TERF	ACAD	2380	ASD TERRAIN FLIGHT (TERF)	X											G			*					
	STERF	2300	TERF MANEUVERS SIM	X							2.0			D	S	1		*	2380,2201				
	TERF	2310	TERF	X									1.5	D	A	1		*	2210,2300		2103		
	TERF	2311	SECTION TERF	X	X	X	X						1.5	D	A	2		365	2115,2310		2103		
TOTAL TERF STAGE								0	0.0	1	2.0	2	3.0										
HEAVY LIFT EXTERNAL STAGE (EXT)																							
EXT	ACAD	2480	HEAVY LIFT OPERATIONS (EXT)	X	X		X								G			365					
	ACAD	2481	ASSAULT SUPPORT TO ARTILLERY	X											G			*					
	SEXT	2400	HEAVY LIFT EXTERNALS SIM	X							1.0			D	S	1		*	2480,2481,2201				
	SEXT	2402	NS HEAVY LIFT EXTERNALS SIM	X	X	X					2.0			HLL	S	1		*	2105,2400				
	EXT	2410	HEAVY LIFT SINGLE POINT EXTERNALS	X	X		X						1.5	D	A	1		485	2210,2400		2103		
	EXT	2411	HEAVY LIFT DUAL POINT EXTERNALS	X	X		X						1.5	D	A	1		365	2410		2103,2410		
	EXT	2420	HLL HEAVY LIFT SINGLE POINT EXTERNALS	X	X		X						1.5	HLL	A	1		485	2220,2402,2410		2103,2410		
	EXT	2421	HLL HEAVY LIFT DUAL POINT EXTERNALS	X	X	X	X						1.5	HLL	A	1		180	2420		2103,2410,2411,2420		
	EXT	2430	LLL HEAVY LIFT EXTERNAL	X	X	X	X						1.5	LLL	A	1		180	2230,2420,2421,2920		2103,2410,2411,2420,2421		
TOTAL EXT STAGE								0	0.0	2	3.0	5	7.5										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
GROUND THREAT REACTION STAGE (GTR)																							
GTR	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2586	RF SAM(*)	X	X		X								G			365					
	ACAD	2587	RADAR PRINCIPLES(*)	X											G			*					
	ACAD	2588	CH-53 DM/GTR I (GTR)	X											G			*					
	ACAD	2589	SURFACE TO AIR THREAT TO THE MAGTF(*)	X											G			*					
	SGTR	2500	GTR & ASE FAM SIM	X	X	X	X				1.5			D/NS	S	1		365	2580,2581,2582,2583,2584,2585,2586,2587,2588,2589, 2311		2540,2541		
	GTR	2540	NON RADAR GTR	X	X		X							1.5	(NS)	A/S	2		365	2500		2103,2115,2311,2500	
GTR	2541	RADAR GTR	X	X		X							1.5	(NS)	A/S	2		365	2500		2103,2115,2311,2500		
TOTAL GTR STAGE								0	0.0	1	1.5	2	3.0										
HELICOPTER AIR TO AIR REFUELING STAGE (HAAR)																							
HAAR	ACAD	2680	HAAR (AR)	X	X		X								G			365					
	SHAAR	2600	DAY AND NS HAAR SIM	X		X					2.0			D/NS	S	1		*	2680,2110				
	HAAR	2610	DAY HAAR LEFT HOSE PREFERRED	X									1.5	D	A	1+		*	2115,2600				
	HAAR	2611	DAY HAAR LEFT & RIGHT HOSE	X	X	X	X						1.5	D	A	1+		180	2610		2103		
	HAAR	2640	NS HAAR	X	X	X	X						1.5	NS	A	1+		180	2120,2611		2103,2611		
TOTAL HAAR STAGE								0	0.0	1	2.0	3	4.5										
AERIAL GUNNERY STAGE (AG)																							
AG	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365					
	AG	2810	AERIAL GUNNERY	X	X		X						1.5	D	A	1+		*	2880,2103		2103		
	AG	2840	NS GUNNERY	X	X		X						1.5	NS	A	1+		365	2810		2103,2810		
TOTAL AG STAGE								0	0.0	0	0.0	2	3.0										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
TACTICS STAGE (TAC)																							
TAC	ACAD	2980	OBJECTIVE AREA PLANNING (TAC)	X	X		X								G			365					
	ACAD	2981	ROE(*)	X											G			*					
	ACAD	2982	EXECUTION CHECKLIST	X											G			*					
	ACAD	2983	PROBLEM FRAMING	X											G			*					
	ACAD	2984	ASSAULT SUPPORT ESCORT TACTICS(*)	X											G			*					
	STAC	2900	INTRODUCTION TO TACTICS	X							2.0			D	S/A	2		*	2980,2981,2982,2983,2984, 2500				
	TAC	2910	LOW THREAT LEVEL TACTICS	X									2.0	D	A	2+		*	2211,2311,2900		2103,2201,2211		
TAC	2911	MEDIUM THREAT LEVEL TACTICS	X	X		X						2.0	D	A	2+		365	2211,2311,2910		2103,2201,2211			
TOTAL TAC STAGE								0	0.0	1	2.0	2	4.0										
NIGHT SYSTEMS HIGH LIGHT LEVEL STAGE (NS HLL)																							
HLL	ACAD	2190	ASSAULT NVG PREFLIGHT AND ADJUSTMENT	X											G			*					
	ACAD	2191	NVG SYSTEMS AND IMAGE CHARACTERISTICS	X											G			*					
	ACAD	2192	THE NIGHT OPERATIONAL ENVIRONMENT	X											G			*					
	ACAD	2193	NVG MISPERCEPTIONS AND ILLUSIONS	X											G			*					
	ACAD	2194	NVD ROUTE PLANNING CONSIDERATIONS	X											G			*					
	ACAD	2195	NIGHT OPERATIONS AND PLANNING AIDS	X											G			*					
	ACAD	2196	HUMAN FACTORS	X											G			*					
	ACAD	2197	CIRCADIAN RHYTHM AND FATIGUE	X											G			*					
	ACAD	2198	INTRO TO NVG TACTICAL EMPLOYMENT	X											G			*					
	SHLL	2105	OPERATIONS OF AIRCRAFT NS SIM	X							2.0			HLL	S	1		*	2190,2191,2192,2193,2194,2195, 2196,2197,2198,2100		2100		
	HLL	2120	HLL FORM	X									1.5	HLL	A	2		*	2105,2115		2103		
	HLL	2220	HLL CALS	X									1.5	HLL	A	1		*	2105,2210		2103		
	HLL	2221	HLL SECTION CALS / RVL	X	X	X	X						1.5	HLL	A	2		180	2120,2220		2103,2201,2211		
	HLL	2320	HLL TERF	X									1.5	HLL	A	1		*	2105,2310		2103		
HLL	2321	HLL SECTION TERF	X	X	X	X						1.5	HLL	A	2		180	2120,2311,2320		2103,2311			
HLL	2920	HLL CHECK/LOW THREAT TACTICS	X	X	X	X						2.0	HLL	A	2+		365	2221,2321,2911		2103,2201,2211,2221			
TOTAL NS HLL STAGE								0	0.0	1	2.0	6	9.5										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
NIGHT SYSTEMS LOW LIGHT LEVEL STAGE (NS LLL)																							
LLL	ACAD	2199	BATTLEFIELD ILLUMINATION AND ITG PLANNING CONSIDERATIONS	X											G			*					
	SLLL	2106	LLL CALS/RVL SIM	X							1.5			LLL	S	1		*	2199,2105		2100,2201		
	LLL	2230	LLL CALS	X									1.5	LLL	A	1		*	2106,2920		2201		
	LLL	2231	LLL SECTION CALS / RVL	X	X	X	X						1.5	LLL	A	2		180	2230		2103,2201,2211,2221		
	LLL	2330	LLL TERF	X									1.5	LLL	A	1		*	2106,2920		2103		
	LLL	2331	LLL SECTION TERF	X	X	X	X						1.5	LLL	A	2		180	2330		2103,2311,2321		
LLL	2930	LLL CHECK/MED THREAT TACTICS	X	X	X	X						2.0	LLL	A	2+		365	2231,2331,2920		2103,2201,2211,2221,2231, 2911,2920			
TOTAL NS LLL STAGE								0	0.0	1	1.5	5	8.0										
CORE SKILL PHASE TOTAL								0	40.0	14	25.0	32	51.0										
3000 PHASE - MISSION SKILLS																							
ACADEMIC STAGE (ACAD)																							
ACAD	ACAD	3080	R2P2	X					1.0						G			*					
	ACAD	3081	CONTESTED EMS OPERATIONS AND MITIGATION	X					0.7						G			*					
	ACAD	3082	NEO EXECUTION	X					0.8						G			*					
	ACAD	3083	ACE INTEL PREP OF THE BATTLESPACE	X					0.8						G			*					
	ACAD	3084	PERSONNEL RECOVERY (*)	X					1.0						G			*					
	ACAD	3085	TRAP TTPs (*)	X					1.0						G			*					
ACAD	3086	CASEVAC	X					0.5						G			*						
TOTAL ACAD STAGE								7	5.8	0	0.0	0	0.0										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
COMBAT ASSAULT TRANSPORT STAGE (CAT)																							
CAT	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2586	RF SAM(*)	X	X		X								G			365					
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365					
	ACAD	2980	OBJECTIVE AREA PLANNING (TAC)	X	X		X								G			365					
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810		2103,2810		
	LLL	2331	LLL SECTION TERF	X	X	X	X							LLL	A	2		180	2330		2103,2311,2321		
	LLL	2930	LLL CHECK/MED THREAT TACTICS	X	X	X	X							LLL	A	2+		365	2231,2331,2920		2103,2201,2211,2221,2231, 2911,2920		
	ACAD	3080	R2P2	X											G			*					
	ACAD	3081	CONTESTED EMS OPERATIONS AND MITIGATION	X											G			*					
	ACAD	3082	NEO EXECUTION	X											G			*					
	ACAD	3083	ACE INTEL PREP OF THE BATTLESPACE	X											G			*					
	CAT	3140	COMBAT ASSAULT TRANSPORT TACTICS	X	X	X	X							2.0	(N)	A/S	2+	X	180	2930,3080,3081,3082,3083,8201,8202, 8203,8204,8205,8206,8208,8221,8222, 8223,8224,8225,8226,8227,8228,8361, 8362,8363,8364,8366,8367		2911	
TOTAL AT STAGE								0	0.0	0	0.0	1	2.0										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																								
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM	
HEAVY ROTARY WING AIR DELIVERY STAGE (AD)																								
AD	ACAD	2480	HEAVY LIFT OPERATIONS (EXT)	X	X		X								G			365						
	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365						
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365						
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365						
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365						
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365						
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365						
	ACAD	2586	RF SAM(*)	X	X		X								G			365						
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X									G			365					
	ACAD	2980	OBJECTIVE AREA PLANNING (TAC)	X	X		X									G			365					
	EXT	2430	LLL HEAVY LIFT EXTERNAL	X	X	X	X							LLL	A	1		180	2230,2420,2421,2920		2103,2410,2411,2420,2421			
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311			
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311			
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810		2103,2810			
	LLL	2331	LLL SECTION TERF	X	X	X	X							LLL	A	2		180	2330		2103,2311,2321			
	LLL	2930	LLL CHECK/MED THREAT TACTICS	X	X	X	X							LLL	A	2+		365	2231,2331,2920		2103,2201,2211,2221,2231,2911,2920			
	ACAD	3080	R2P2	X											G			*						
	ACAD	3081	CONTESTED EMS OPERATIONS AND MITIGATION	X												G			*					
	ACAD	3082	NEO EXECUTION	X												G			*					
	ACAD	3083	ACE INTEL PREP OF THE BATTLESPACE	X												G			*					
	AD	3240	HEAVY ROTARY WING AIR DELIVERY TACTICS	X	X	X	X							2.0	(N)	A/S	2+	X	180	2930,8201,8202,8203,8204,205,8206,8208,8221,8222,8223,8224,8225,8226,8227,8228,8365		2911		
TOTAL AD STAGE								0	0.0	0	0.0	1	2.0											

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL STAGE (TRAP)																							
TRAP	ACAD	2480	HEAVY LIFT OPERATIONS (EXT)	X	X		X								G			365					
	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2586	RF SAM(*)	X	X		X								G			365					
	ACAD	2680	HAAR (AR)	X	X		X								G			365					
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365					
	ACAD	2980	OBJECTIVE AREA PLANNING (TAC)	X	X		X								G			365					
	EXT	2430	LLL HEAVY LIFT EXTERNAL	X	X	X	X							LLL	A	1		180	2230,2420,2421,2920		2103,2410,2411,2420,2421		
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	HAAR	2640	NS HAAR	X	X	X	X							NS	A	1		180	2611		2103,2611		
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810		2103,2810		
	LLL	2331	LLL SECTION TERF	X	X	X	X							LLL	A	2		180	2330		2103,2311,2321		
	LLL	2930	LLL CHECK/MED THREAT TACTICS	X	X	X	X							LLL	A	2+		365	2231,2331,2920		2103,2201,2211,2221,2231,2911, 2920		
	ACAD	3084	PERSONNEL RECOVERY (*)	X											G			*					
	ACAD	3085	TRAP TTPs (*)	X											G			*					
	ACAD	3086	CASEVAC	X											G			*					
	TRAP	3340	TRAP TACTICS	X	X	X	X							2.0	(N)	A/S	2+	X	180	2930,3084,3085,8201,8202,8203,8204, 8205,8206,8208,8221,8222,8223,8224, 8225,8226,8227,8228		2911	
TOTAL TRAP STAGE								0	0.0	0	0.0	1	2.0										



CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																								
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM	
AIR EVACUATION STAGE (AE)																								
AE	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365						
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365						
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365						
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365						
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365						
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365						
	ACAD	2586	RF SAM(*)	X	X		X								G			365						
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365						
	ACAD	2980	OBJECTIVE AREA PLANNING (TAC)	X	X		X								G			365						
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500			2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500			2103,2115,2311		
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810			2103,2810		
	LLL	2331	LLL SECTION TERF	X	X	X	X							LLL	A	2		180	2330			2103,2311,2321		
	LLL	2930	LLL CHECK/MED THREAT TACTICS	X	X	X	X							LLL	A	2+		365	2231,2331,2920			2103,2201,2211,2221,2231,2911, 2920		
	ACAD	3086	CASEVAC	X											G			*						
AE	3440	AIR EVACUATION TACTICS	X	X	X	X						2.0	(N)	A/S	2+	X	180	2930,3086,8201,8202,8203,8204, 8205,8206,8208,8221,8222,8223, 8224,8225,8226,8227,8228			2911			
TOTAL AE STAGE								0	0.0	0	0.0	1	2.0											
TOTAL MISSION PHASE								0	0.0	0	0.0	4	8.0											
4000 PHASE – CORE PLUS																								
ACADEMIC STAGE (ACAD)																								
ACAD	ACAD	4180	HIE	X					0.5						G			*						
	ACAD	4480	INDEPENDENT HOOK	X					0.7						G			*						
	ACAD	4580	CH-53 DM/GTR II	X					1.5						G			*						
	ACAD	4581	DM GAME PLANNING(*)	X					1.0						G			*						
	ACAD	4582	HELICOPTER PS AND EM	X					1.0						G			*						
	ACAD	4583	ATTACK HELO THREAT TO ASSAULT SUPPORT(*)	X					0.5						G			*						
	ACAD	4584	FW THREAT TO ASSAULT SUPPORT(*)	X					1.0						G			*						
	ACAD	4680	CBRN	X	X		X		1.5						G			1095						
	ACAD	4780	INTRODUCTION TO BOAT OPERATIONS	X					1.0						G			*						
	ACAD	4781	SHIPBOARD OPERATIONS PLANNING	X					0.8						G			*						
	ACAD	4990	CH-53K AIRBORNE COMMAND AND CONTROL	X					1.0						G			*						
	ACAD	4991	AIR ASSAULT OPERATIONS(*)	X					1.0						G			*						
	ACAD	4992	MAGTF TARGETING AND FIRE SUPPORT PLANNING	X					1.0						G			*						
	ACAD	4993	JCAS	X					1.0						G			*						
	ACAD	4994	ADGR	X					1.0						G			*						
TOTAL ACAD STAGE								15	14.5	0	0.0	0	0.0											

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																								
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM	
HELICOPTER INSERTION & EXTRACTION TECHNIQUES STAGE (HIE)																								
HIE	ACAD	4180	HIE	X											G			*						
	HIE	4110	HELOCAST	X	X		X						1.5	(NS)	A	1		485			2103			
	HIE	4140	FASTROPE/SPIE/RAPPEL	X	X		X						1.5	(NS)	A	1		*			2103			
	HIE	4141	PARA OPS	X	X		X						1.5	(NS)	A	1		*			2103			
TOTAL HIE STAGE								0	0.0	0	0.0	3	4.5											
BATTLEFIELD ILLUMINATION STAGE (BI)																								
BI	BI	4340	BATTLEFIELD ILLUMINATION	X									1.0	NS	A	1		1095	2210		2103			
TOTAL BI STAGE								0	0.0	0	0.0	1	1.0											
TERRAIN FLIGHT / INDEPENDENT HOOK EXTERNALS STAGE (TERF / IND EXT)																								
EXT	ACAD	4480	INDEPENDENT HOOK	X											G			*						
	SEXT	4411	INDEPENDENT HOOK SIM	X	X	X	X				2.0			(NS)	S	1		485	2402,4480					
	SEXT	4412	TERF EXTERNALS SIM	X	X						1.5			(NS)	S/A	1		*	2402					
	EXT	4440	TERF EXTERNALS	X	X		X						1.5	(NS)	A/S	1		365	4412		2103,2411			
	EXT	4441	INDEPENDENT HOOK	X	X	X							1.5	(NS)	A	1		*	4411		2103,2410			
TOTAL TERF/ IND EXT STAGE								0	0.0	2	3.5	2	3.0											
DEFENSIVE MEASURES STAGE (DM)																								
DM	ACAD	4580	CH-53 DM/GTR II	X											G			*						
	ACAD	4581	DM GAME PLANNING(*)	X											G			*						
	ACAD	4582	HELICOPTER PS AND EM	X											G			*						
	ACAD	4583	ATTACK HELO THREAT TO ASSAULT SUPPORT(*)	X											G			*						
	ACAD	4584	FW THREAT TO ASSAULT SUPPORT(*)	X											G			*						
	DM	4510	RW DM	X	X		X						1.5	D	A	2		365	2311,4580,4581,4582,4583,4584		2103,2115,2311			
	DM	4511	FW DM	X	X		X						1.5	D	A	2		365	2311,4580,4581,4582,4583,4584		2103,2115,2311			
TOTAL DM STAGE								0	0.0	0	0.0	2	3.0											
CHEMICAL, BIOLOGICAL, RADIATION, AND NUCLEAR STAGE (CBRN)																								
CBRN	ACAD	4680	CBRN	X	X		X								G		X	1095						
	SCBRN	4600	CBRN FAM	X							1.5			(N)	S/A	1	X	*	2100,4680		2100			
TOTAL CBRN STAGE								0	0.0	1	1.5	0	0.0											
FIELD CARRIER LANDING PRACTICE STAGE (FCLP)																								
FCLP	ACAD	4780	INTRODUCTION TO BOAT OPERATIONS	X											G			*						
	SFCLP	4700	CQ SIM	X		-					1.5			(N)	S	1		*	2100,4780		2100			
	FCLP	4710	DAY FCLP	X	X		X						1.5	D	A	1		365	2210,4700					
	FCLP	4740	NS FCLP	X	X	X	X						1.5	NS	A	1		365	4710		4710			
TOTAL FCLP STAGE								0	0.0	1	1.5	2	3.0											

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
CARRIER QUALIFICATION STAGE (CQ)																							
CQ	ACAD	4781	SHIPBOARD OPERATIONS PLANNING	X											G			*					
	DAY CQ	4711	DAY CQ	X	X	X	X						1.5	D	A	1		365	4710,4781		2103,4710		
	NS CQ	4742	NS CQ	X	X	X	X						1.0	NS	A	1		365	2920,4711,4740		2103,4710,4711,4740,4741		
TOTAL CQSTAGE								0	0.0	0	0.0	2	2.5										
UNAIDED CARRIER QUALIFICATION STAGE (UCQ)																							
UCQ	N CQ	4741	UNAIDED CQ	X			X						1.0	N*	A/S	1		365	4711		2103,4710,4711		
TOTAL UCQ STAGE								0	0.0	0	0.0	1	1.0										
TACTICS STAGE (TAC)																							
TAC	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2586	RF SAM(*)	X	X		X								G			365					
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365					
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810		2103,2810		
	ACAD	4990	CH-53K AIRBORNE COMMAND AND CONTROL	X											G			*					
	ACAD	4991	AIR ASSAULT OPERATIONS(*)	X											G			*					
	ACAD	4992	MAGTF TARGETING AND FIRE SUPPORT PLANNING	X											G			*					
	ACAD	4993	JCAS	X											G			*					
	TAC	4940	DIV TACTICS	X	X		X							2.0	(NS)	A	3+		365	2911,4990,4991,4992,4993		2103,2211,2311,2911	
TAC	4941	URBAN TACTICS	X	X		X							2.0	(NS)	A	2+		365	2911,4990,4991,4992,4993		2103,2211,2311,2911		
TAC	4942	LONG RANGE TACTICS	X	X		X							4.0	(NS)	A	2+		365	2911,4990,4991,4992,4993		2103,2211,2311,2911		
TOTAL TAC STAGE								0	0.0	0	0.0	3	8.0										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
RAPID INSERTION/EXTRACTION TACTICS STAGE (RIE)																							
RIE	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2586	RF SAM(*)	X	X		X								G			365					
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365					
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810		2103,2810		
	ACAD	4180	HIE	X											G								
	HIE	4110	HELOCAST	X	X		X						1.5	(NS)	A	1		485	2210,4180		2103		
	HIE	4140	FASTROPE/SPIE/RAPPEL	X	X		X						1.5	(NS)	A	1		*	2210,4180		2103		
	HIE	4141	PARA OPS	X	X		X						1.5	(NS)	A	1		*	2210,4180		2103		
	ACAD	4991	AIR ASSAULT OPERATIONS(*)	X											G			*					
ACAD	4992	MAGTF TARGETING AND FIRE SUPPORT PLANNING	X											G			*						
ACAD	4993	JCAS	X											G			*						
RIE	4980	RAPID INSERTION/ EXTRACTION	X	X		X						2.0	(N)	A/S	1+	X	365	2930,4991,4992,4993	4110~helo cast,4140~spie, 4141~paraops	2103,2211,2311,2911			
TOTAL RIE STAGE								0	0.0	0	0.0	4	6.5										
AVIATION DELIVERED GROUND REFUELING STAGE (ADGR)																							
ADGR	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365					
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365					
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365					
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365					
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365					
	ACAD	2585	ADA THREAT TO AS(*)	X	X		X								G			365					
	ACAD	2586	RF SAM(*)	X	X		X								G			365					
	ACAD	2880	WEAPONS EMPLOYMENT TECH	X	X		X								G			365					
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X							(NS)	A/S	2		365	2500		2103,2115,2311		
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2105,2810		2103,2810		
	ACAD	4994	ADGR	X											G			*					
	ADGR	4981	ADGR TACTICS	X	X		X						2.0	(N)	A/S	1+		365	2930,4994				
TOTAL ADGR STAGE								0	0.0	0	0.0	1	2.0										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																								
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM	
SEA BASED OPERATIONS STAGE (SEA)																								
SEA	ACAD	2580	CH-53K APR-39 (*)	X	X	X	X								G			365						
	ACAD	2581	CH-53K ALE-47 (*)	X	X	X	X								G			365						
	ACAD	2582	CH-53K DIRCM (*)	X	X	X	X								G			365						
	ACAD	2583	CH-53K MISSILE WARNING SYSTEM(*)	X	X	X	X								G			365						
	ACAD	2584	IR SAM THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365						
	ACAD	2585	ADA THREAT TO ASSAULT SUPPORT (*)	X	X		X								G			365						
	ACAD	2586	RF SAM(*)	X	X		X								G			365						
	ACAD	2880	WEAPONS EMPLOYMENT TECHNIQUES	X	X		X								G			365						
	GTR	2540	NON RADAR GTR	X	X		X								(NS)	A/S	2		365	2500		2103,2115,2311		
	GTR	2541	RADAR GTR	X	X		X								(NS)	A/S	2		365	2500		2103,2115,2311		
	AG	2840	NS GUNNERY	X	X		X								NS	A	1		365	2105,2810		2103,2810		
	ACAD	4780	INTRODUCTION TO BOAT OPERATIONS	X												G			*					
	ACAD	4781	SHIPBOARD OPERATIONS PLANNING	X												G			*					
	DAY CQ	4711	DAY CQ	X	X	X	X							1.5	D	A	1		365	4710,4781		2103,4710		
NS CQ	4742	NS CQ	X	X	X	X							1.0	NS	A	1		365	4711,4740		2103,4710,4711,4740,4741			
SEA	4982	SEA BASED TACTICS	X	X		X							2.0	(N)	A/S	1+		365	2930		2103,2110,2211,4710,2911			
TOTAL SEA STAGE								0	0.0	0	0.0	3	4.5											
TOTAL CORE PLUS PHASE								15	14.5	4	6.5	25	40.5											
INSTRUCTOR TRAINING (5000 PHASE)																								
ACADEMICS STAGE (ACAD)																								
ACAD	ACAD	5180	INSTRUCTIONAL TECHNIQUES	X					1.0						G			*						
TOTAL ACAD STAGE								1	1.0	0	0.0	0	0.0											
BASIC INSTRUCTOR PILOT STAGE (BIP)																								
BIP	ACAD	5180	INSTRUCTIONAL TECHNIQUES	X					1.0						G			*						
	SBIP	5100	BIP IUT FAM/CAL/INST	X						1.5				D	S/A	1+		*	NSQ-LLL,Core & Mission Skill complete, 5180					
	SBIP	5101	BIP IUT EXT/CQ	X						1.5				D	S/A	1+		*	5100					
	BIP	5110	BIP CHECK	X	X								1.5	D	A	1+		*	5101,6122					
TOTAL TERFI STAGE								1	1.0	2	3.0	1	1.5											
TERF INSTRUCTOR STAGE (TERFI)																								
TERFI	TERFI	5200	TERFI UT 1 A/C TERF	X									1.5	D	A	1		*	2311		2103			
	TERFI	5201	TERFI UT EXT	X									1.5	D	A	1		*	4412		2103			
	TERFI	5202	TERFI CHECK	X	X								1.5	D	A	2		*	5200, 5201		2103,2311			
TOTAL TERFI STAGE								0	0.0	0	0.0	3	4.5											

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
AERIAL REFUELING INSTRUCTOR STAGE (ARI)																							
ARI	ARI	5300	ARI UT DAY	X	X								1.5	D	A	1		*	2611		2103,2611		
	ARI	5301	ARI NIGHT CHECK	X	X								1.5	NS	A	1		*	2640		2103,2640		
TOTAL ARI STAGE								0	0.0	0	0.0	2	3.0										
TACTICAL SIMULATOR INSTRUCTOR STAGE (TSI)																							
TSI	TSI	5410	TACTICAL SIMULATOR INSTRUCTOR	X		X					2.0			(NS)	S			*	5180,5100				
	TSI	5411	TACTICAL SIMULATOR INSTRUCTOR	X		X					2.0			(NS)	S			*	5410				
TOTAL TSI STAGE								0	0.0	2	4.0	0	0.0										
DEFENSIVE MEASURES INSTRUCTOR STAGE (DMI)																							
DMI	DMI	5700	2 V GROUND THREAT	X									1.5	D	A	2		*	2540,2541				
	DMI	5701	2 V FW/RW	X									1.5	D	A	2		*	4510,4511		2103,2311		
	DMI	5702	2 V FW/RW	X	X								1.5	D	A	2		*	5700,5701		2103,2311		
TOTAL DMI STAGE								0	0.0	0	0.0	3	4.5										
NIGHT SYSTEMS INSTRUCTOR STAGE (NSI)																							
NSI	SNSI	5800	ANVIS HUD	X							1.5			NS	S/A			*					
	NSI	5801	NSI UT LOW WORK	X									1.5	NS	A	1		*	5800,2230				
	NSI	5802	NSI UT CALS/EXT	X									1.5	NS	A	1		*	5800,2430				
	NSI	5803	NSI UT TERF	X									1.5	NS	A	2		*	5800,2231,2331				
	NSI	5804	NSI UT TACEX	X									1.5	NS	A	2		*	5800,2930				
	NSI	5805	NSI CHECK	X	X								4.5	NS	A	2		*	5800,5801,5802,5803,5804				
TOTAL NSI STAGE								0	0.0	1	1.5	5	10.5										
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)																							
ACADEMICS STAGE (ACAD)																							
ACAD	ACAD	6580	AMC	X					0.8						G			*					
	ACAD	6012	FUNCTIONAL CHECK FLIGHT READINGS	X					6.0						G			*					
	ACAD	6013	FCP SEMINAR	X					16.0						G			*					
TOTAL ACADEMIC STAGE								3	22.8	0	0.0	0	0.0										
NATOPS STAGE																							
NATOPS	NATOPS	6000	NATOPS OPEN BOOK EXAM	X	X	X	X		3.0						GE			365					X
	NATOPS	6001	NATOPS CLOSED BOOK EXAM	X	X	X	X		1.0						GE			365	6000				X
	NATOPS	6002	NATOPS ORAL EXAM	X	X	X	X		2.0						GE			365	6001				X
	NATOPS	6004	MONTHLY EP EXAM	X	X	X	X		1.0						GE			30					X
	NATOPS	6100	NATOPS EVALUATION	X	X	X	X						1.5	(N)	S/A	1		365	6002		6002,6004	I	X
TOTAL NATOPS STAGE								4	7.0	0	0.0	1	1.5										
CREW RESOURCE MANAGEMENT STAGE (CRM)																							
CRM	CRM	6003	CRM CLASS	X	X		X		3.0						GE			365					X
	CRM	6101	PRACTICE CRM PRICIPLES	X	X		X						1.5	(N)	S/A	1		365	6003			I	X
TOTAL CRM STAGE								1	3.0	0	0.0	1	1.5										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
INSTRUMENT STAGE (INST)																							
INST	INST	6005	INSTRUMENT GROUND SCHOOL	X	X		X		4.0						GE			365					X
	INST	6006	WRITTEN INSTRUMENT EXAM	X	X		X		1.0						GE			365	6005				X
	INST	6102	INSTRUMENT EVALUATION	X	X		X						1.5		S/A	1		365	6006			I	X
TOTAL INST STAGE								2	5.0	0	0.0	1	1.5										
HELICOPTER AIRCRAFT COMMANDER STAGE (HAC)																							
HAC	HAC	6120	HAC REVIEW	X									1.5	D	A/S	1		*	NSQ-LLL, CORE AND MISSION SKILL COMPLETE, 450 FLT HRS	2000&3000 PHASE COMP, 450 FLT HRS			
	HAC	6121	NS HAC REVIEW	X									1.5	NS	A/S	1		*	NSQ-LLL, CORE AND MISSION SKILL COMPLETE, 450 FLT HRS	2000&3000 PHASE COMP, 450 FLT HRS			
	HAC	6122	DAY INTO NIGHT HAC EVALUATION	X	X	X							2.0	(N)	A	1		*	ACPM ACADEMIC SYLLABUS,6001,6120,6121				
TOTAL HAC STAGE								0	0.0	0	0.0	3	5.0										
SECTION LEADER STAGE (SL)																							
SL	SL	6200	DAY OR NIGHT CORE SKILL SL REVIEW	X									1.5	(NS)	A/S	2	X	*	6122,8661,8662,8663,8664, 3 FLT AS WINGMAN, CORE & MISSION SKILL COMPLETE	3 FLTS AS WINGMAN			
	SL	6201	MCT BASED TACTICAL SCENARIO	X									1.5	(NS)	A/S	2	X	*	6122,8661,8662,8663,8664, 3 FLT AS WINGMAN, CORE & MISSION SKILL COMPLETE	3 FLTS AS WINGMAN			
	SL	6202	DAY OR NIGHT CORE SKILL SL REVIEW	X									1.5	(NS)	A/S	2	X	*	6122,8661,8662,8663,8664, 3 FLT AS WINGMAN, CORE & MISSION SKILL COMPLETE	3 FLTS AS WINGMAN			
	SL	6203	NIGHT SL EVAL	X	X								1.5	NS	A	2		*	6200,6201,6202, 25 HAC HRS	25 HAC HRS			
TOTAL SL STAGE								0	0.0	0	0.0	4	6.0										
DIVISION LEADER STAGE (DL)																							
DL	DL	6300	DAY OR NIGHT CORE SKILL DL REVIEW	X									1.5	(NS)	A/S	3+	X	*	6203,8688, 3 FLTS AS SL	3 FLIGHTS AS SL,			
	DL	6301	MCT BASED TACTICAL SCENARIO	X									1.5	(NS)	A/S	3+	X	*	6203,8688, 3 FLTS AS SL	3 FLIGHTS AS SL,			
	DL	6302	DL EVALUATION	X	X								1.5	(NS)	A	3+		*	6300,6301 ,600 HRS, 200 IN TYPE, 50 IN MODEL	600 FLT HRS, 200 HRS IN TYPE, 50 HRS IN MODEL			
TOTAL DL STAGE								0	0.0	0	0.0	3	4.5										
FLIGHT LEADER STAGE (FL)																							
FL	FL	6400	FLIGHT LEADER EVAL	X									1.5	(NS)	A	5+		*	6302,8685,8686,8687, 3 FLTS AS DL, 700 HRS	3 FLIGHTS AS DL, 700 FLT HRS			
TOTAL FL STAGE								0	0.0	0	0.0	1	1.5										
AIR MISSION COMMANDER STAGE (AMC)																							
AMC	AMC	6500	AMC EVAL	X									1.5	(NS)	G	5+		*	6400,6580				
TOTAL AMC STAGE								0	0.0	0	0.0	1	1.5										

CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																								
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM	
FUNCTIONAL CHECK PILOT STAGE (FCP)																								
FCP	FCP	6600	FCP OPEN BOOK EXAM						3.0						G									
	FCP	6610	INTRO IVHMS	X		X					1.0			D	S/A	1		*		25 HAC HOURS				
	FCP	6611	REVIEW IVHMS	X							1.0			D	S/A	1		*	6600,6601,6610					
	FCP	6612	INTRO FULL FCF CARD	X		X					1.0			D	S/A	1		*		25 HAC HOURS				
	FCP	6613	REVIEW FULL FCF CARD	X		X					1.0			D	S/A	1		*	6612					
	FCP	6614	REVIEW FULL FCF CARD	X	X								1.5	D	A	1		*	6610,6612,6613	25 HAC HOURS				
	FCP	6615	FCP EVAL	X	X	X							1.5	D	S/A	1		*	6614					
TOTAL FCP STAGE								1	3.0	4	4.0	2	3.0											
7000 PHASE - EVALUATION																								
MET	CAT	7001	COMBAT ASSAULT TRANSPORT	X	X	X	X						1.5	(NS)	A	2+		730	3140		3140			
	AD	7002	HEAVY ROTARY WING AIR DELIVERY	X	X	X	X						1.5	(NS)	A	2+		730	3240		3240			
	TRAP	7003	TRAP	X	X	X	X						1.5	(NS)	A	2+		730	3340	25 HAC HOURS	3340			
	AE	7004	AIR EVACUATION	X	X	X	X						1.5	(NS)	A	2+		730	3440		3440			
	RIE	7005	RAPID INSERTION/EXTRACTION	X	X	X	X						1.5	(NS)	A	2+		730	4980	25 HAC HOURS	4980			
	ADGR	7006	AVIATION DELIVERED GROUND REFUELING	X	X	X	X						1.5	(NS)	A	2+		730	4981		4981			
	SEA	7007	SEA BASED TACTICS	X	X	X	X						1.5	(NS)	A	2+		730	4982	25 HAC HOURS	4982			
TOTAL MET STAGE								0	0.0	0	0.0	7	10.5											
8000 PHASE - AVIATION CAREER PROGRESSION MODEL (ACPM)																								



CH-53K PILOT T&R MATRIX (2000-8000 PHASE)																							
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	S	M	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING	E	EOM
ACPM	ACPM	8201	MACCS AGENCIES, FUNCTIONS AND CONTROL OF AIRCRAFT AND MISSILES	X					0.3						G			*					
	ACPM	8202	TACTICAL AIR COMMAND CENTER (TACC)	X					0.3						G			*					
	ACPM	8203	DIRECT AIR SUPPORT CENTER (DASC)	X					0.3						G			*					
	ACPM	8204	TACTICAL AIR OPERATIONS CENTER (TAOC)	X					0.3						G			*					
	ACPM	8205	MARINE AIR TRAFFIC CONTROL (MATC)	X					0.3						G			*					
	ACPM	8206	LOW ALTITUDE AIR DEFENSE (LAAD)	X					0.3						G			*					
	ACPM	8208	MARINE WING COMMUNICATON SQUADRON (MWCS)	X					0.3						G			*					
	ACPM	8221	AVAIATION OPERATIONS	X					0.3						G			*					
	ACPM	8222	CONTROL OF AIRCRAFT AND MISSILES	X					0.3						G			*					
	ACPM	8223	OFFENSIVE AIR SUPPORT (OAS)	X					0.3						G			*					
	ACPM	8224	ASSAULT SUPPORT	X					0.3						G			*					
	ACPM	8225	AIR RECONNAISSANCE	X					0.3						G			*					
	ACPM	8226	ELECTRONIC WARFARE	X					0.3						G			*					
	ACPM	8227	ANTIAR WARFARE	X					0.3						G			*					
	ACPM	8228	AVIATION GROUND SUPPORT (AGS)	X					0.3						G			*					
	ACPM	8341	SURFACE TO AIR MISSILES (SAM) THREAT	X					0.3						G			*					
	ACPM	8342	FIXED WING THREAT	X					0.3						G			*					
	ACPM	8343	ROTARY WING THREAT	X					0.3						G			*					
	ACPM	8361	GROUND COMBAT OPERATIONS	X					0.3						G			*					
	ACPM	8362	FIRE SUPPORT COORDINATION IN THE GCE	X					0.3						G			*					
	ACPM	8363	MAGTF COMMAND AND CONTROL	X					0.3						G			*					
	ACPM	8364	MAGTF COMMUNICATIONS	X					0.3						G			*					
	ACPM	8365	PHASING CONTROL ASHORE	X					0.3						G			*					
	ACPM	8366	INFORMATION MANAGEMENT	X					0.3						G			*					
	ACPM	8367	UNMANNED AIRCRAFT SYSTEMS (UAS) SUPPORT TO THE MAGTF	X					0.3						G			*					
	ACPM	8661	COMMAND & CONTROL OF JOINT AIR OPERATIONS	X					0.3						G			*					
	ACPM	8662	THEATER AIR GROUND SYSTEMS (TAGS)	X					0.3						G			*					
	ACPM	8663	JOINT FIRE SUPPORT	X					0.3						G			*					
	ACPM	8664	CLOSE AIR SUPPORT (CAS)	X					0.3						G			*					
	ACPM	8685	JOINT TARGETING	X					0.3						G			*					
	ACPM	8686	NORTH ATLANTIC TREATY ORGANIZATION (NATO)	X					0.3						G			*					
	ACPM	8687	JOINT AIRSPACE CONTROL	X					0.3						G			*					
	ACPM	8688	COUNTERING AIR AND MISSILE THREATS	X					0.3						G			*					
TOTAL ACPM STAGE								33	9.9	0	0.0	0	0.0										



CHAPTER 3  
CH-53 CREW CHIEF (MOS 6173)

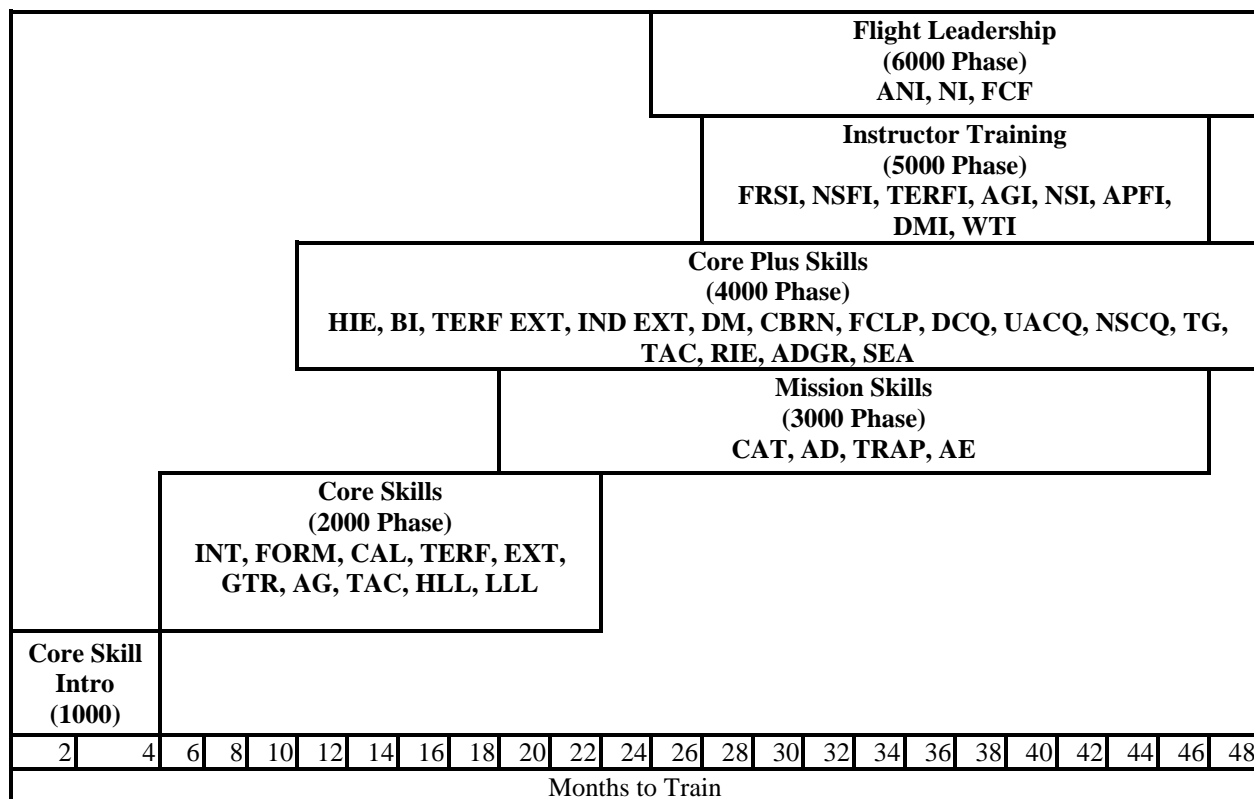
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CHAPTER 3  
CH-53K CREW CHIEF (MOS 6173)

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

3.1 CREW CHIEF (6173) TRAINING PROGRESSION MODEL: This model represents the recommended training progression for the average Crew Chief (6173) crewmember. Units should use the model as a point of departure to generate individual training plans.



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

Program of Instruction (POI) Assignment

3.2.1 Basic, and Transition POI: Crew Chiefs assigned to Basic (B) and Transition (T) POIs shall fly the entire Basic (B) POI.

3.2.2 Basic POI

CH-53K CREW CHIEF Basic POI		
Weeks	Phase of Instruction	Unit
16	Core Skill Introduction Phase	HMHT-302
72	Core Skill Training	Tactical Squadron
112	Mission Skill Training	Tactical Squadron

### 3.2.3 Refresher POI

CH-53K CREW CHIEF Refresher POI		
Weeks	Phase of Instruction	Unit
8	Core Skill Training	Tactical Squadron
12	Mission Skill Training	Tactical Squadron
16	Core Plus Training	Tactical Squadron

3.2. Refresher POI. The Refresher (R) POI is predicated on the experience of the Refresher Crew Chief. Previously designated Crew Chiefs returning to a flying status after being in a non-flying status for a period greater than 365 days shall be assigned to the Refresher (R) POI and fly all (R) coded events. The Squadron Commanding Officer may tailor the individual's Refresher POI per the squadron standardization board recommendations and IAW NAVMC 3500.14 Chapter 2. When the (R) coded events within a stage of training are complete, the Crew Chief may be credited with the entire stage of training. This assumes the Crew Chief has previous proficiency in a stage of training. If the Crew Chief has no previous proficiency in a stage or particular event (i.e. event Never Been Attempted (NBA)), then the Refresher Crew Chief shall fly the entire stage or all events not previously attempted.

### 3.2.5 Series Conversion POI

CH-53K CREW CHIEF Series Conversion POI		
Weeks	Phase of Instruction	Unit
6	Maintenance Conversion Training	CNATT
4	Core Skill Introduction Academics	HMHT-302
8	Core Skill Training	HMHT-302 / Tactical Squadron

3.2.6 Series Conversion POI. The series conversion POI is prescribed for personnel converting from CH-53E to CH-53K. All current CH-53E crew chiefs are required to attend the conversion training at CNATT, complete the Core Skill Introduction Academics from HMHT-302, and fly those 1000-6000 level flights designated by an (S) in the event description. When the (S) coded events within a stage of training are complete, the crew chief may be credited with the entire stage of training. If the series conversion crew chief has no previous proficiency in a stage or particular event (i.e. event Never Been Attempted (NBA)), then they shall fly the entire stage or all events not previously attempted. Crew chief instructors may be re-designated as their previous instructor designations at the completion of the prerequisite T&R events at the discretion of the Squadron Commanding Officer.

3.2.7 Conversion POI. The conversion POI is prescribed for personnel converting from other model aircraft into the CH-53K (i.e. a UH-1 Crew Chief converting to a CH-53K). Conversion crew chiefs shall complete at a minimum all flight events designated by an (S) in the event description as well as all applicable academic events. The Squadron Commanding Officer may add additional training requirements to fit the experience of the conversion crew chief as necessary. If the conversion crew chief has no similar previous proficiency in a stage or particular event (i.e. a UH-1 Crew Chief conducting internal cargo or dual point externals), then the conversion crew chief should fly the entire stage or all events not previously attempted.

3.2.8 Completion of (S) Events. Upon completion of all series conversion events within a stage of training, M-SHARP will automatically log all other events in that stage. This feature will only take place within the 2000, 3000, or 4000 level stages. All other stages with series conversion codes will not automatically update other codes within the stage and will require the squadron's MSHARP administrators to baseline applicable codes within the stage.

### 3.2.9 Fleet Replacement Instructor FRSI POI

CH-53K CREW CHIEF Instructor Training		
Weeks	Phase of Instruction	Unit
3	FRSI Academics	HMHT-302
3	Instructor Training	HMHT-302

## 3.3 PROFICIENCY & CURRENCY

3.3.1 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.

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

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

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

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

**3.3.3 Skill Currency.** Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill and applies to all MOS’s that must comply with NATOPS and CNAFINST 3710.7 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 NAVMC 3500.14D Chapter 3.

**3.4 CERTIFICATION, QUALIFICATION, AND DESIGNATION TABLES.** The tables below delineate T&R events required to be proficient or waived to attain Requirements, Certifications, Qualifications and Designations. In addition to event requirements, all required stage lectures, briefs; squadron training, prerequisites, and other criteria shall be completed prior to completing final events. Certifications, qualification and designation letters signed by the Squadron Commanding Officer shall be placed in section 4 of the Aircrew Performance Records and NATOPS. Loss of proficiency in any qualification event causes the associated qualification to be lost. Regaining a qualification requires completing delinquent R-coded events associated with that qualification. Waiving of all Required Events leading to a Requirement, Certification, Qualification, or Designation, is not allowed.

CH-53K CREW CHIEF/ AG/O REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)	
Qualification	INDIVIDUAL QUALIFICATION REQUIREMENTS
	Event Requirements
TERF	2310, 2311
NSQ HLL	2120, 2220, 2221, 2320, 2321, 2920
NSQ LLL	2230, 2231, 2330, 2331, 2930
BI	4340
DAY CQ	4711
UNAIDED CQ	4741
NIGHT CQ	4742
AG	2800, 2801, 2802, 2812, 2813, 2842, 2843
DM	4510, 4511
TG	4800, 4810, 4811, 4840
ECF	6601, 6602, 6610
NATOPS	6000,6001,6002,6100
CRM	6003,6101

INDIVIDUAL DESIGNATION REQUIREMENTS	
Designation	Event Requirements
Crew Chief	1901 and Designation Letter from FRS CO
TERFI	5700, 5701
APFI	5300, 5301
NSFI	5600, 5601, 5602
NSI	5900, 5901, 5902
AGI	5400 through 5408
DMI	5800, 5801, 5802
FRSI	5100 through 5107
CRMF	6100, See CNAFINST 1542.7 Series
CRMI	6100, See CNAFINST 1542.7 Series
ANI	6100 given by a NATOPS Instructor
NI	6100 given by Model Manager
WTI	See WTI Course Catalog

### 3.5 SYLLABUS NOTES

3.5.1 AIRCREW TRAINING REFERENCES. Aircrew shall use the following references to ensure safe and standardized training procedures, grading criteria, and aircraft operation.

AIRCREW TRAINING REFERENCES	
Designator	Title
CNAF M-3710.7	NATOPS General Flight and Operating Instructions
A1-H53XX-NFM-000	CH-53K NATOPS Flight manual
NAVMC 3500.14	Aviation Training and Readiness (T&R) Program manual
MCO 4790.20	Individual training standards
MCRP 4-11.3E	Multiservice helicopter sling load manual
NTTP 3-22.3-53	CH-53 Air Naval Tactics Techniques and Procedures
NTTP 3-22.5-ASTACSOP	USMC Assault Support Tactical SOP
NTTP 3-22.5-CH-53	CH-53 Tactical Pocket Guide
NVD Manual	USN/USMC Helicopter Night Vision Device
A1-H53XX-CLG-000	CH-53K Cargo loading manual
TM HM-020-800-23&P-M	Tactical Bulk Fuel Delivery System
TM HM-020-800-10	TBFDS Operators Manual
NTRP 3-22.4 CH53E, Appendix H	TBFDS Checklist
EA Academic support package	MAWTS-1 Course Catalog
EA Instructor support package	MAWTS-1 Course Catalog
NTTP 3-22.3-53 Appendix B	Ground Threat Training
NTTP 3-22.3-53 Appendix A	Defensive Measures Training
NTRP 3-22.4	Naval Aviation Technical Information

3.5.2 General. This Manual is written to allow for local conditions and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest developed and proven tactics. All events shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques. Aircrew shall fly night events in accordance with the table of acronyms for environmental conditions.



### 3.5.3 Acronyms for crew requirements

Acronyms for Crew Requirements	
Acronym	Definition
CCUI	Crew Chief Under Instruction
CC	Crew Chief
AG/OUI	Aerial Gunner/Observer Under Instruction
AG/O	Aerial Gunner/Observer

### 3.5.4 Environmental Conditions Matrix

Environmental Conditions	
Code	Meaning
D	Shall be flown daytime
N	Shall be flown at night, may be aided or unaided.
N*	Shall be flown at night, must be flown unaided.
(N*)	May be flown at night – If flown at night, must be flown unaided.
(N)	May be flown at night – If flown at night; may be flown aided or unaided.
NS	Shall be flown at night – Mandatory use of Night Vision Devices.
(NS)	May be flown at night – If flown at night; must be flown with Night Vision Devices.
Note - Aircrew shall fly all night time events at least 30 minutes after official sunset.	
Note – If the event is to be flown in the simulator the Instructor shall set the desired environmental conditions for the event.	

### 3.5.5 Event Terms

EVENT TERMS	
TERM	DESCRIPTION
Discuss	An explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge or procedures.
Demonstrate	The description and performance of a particular maneuver/event by the instructor, observed by the student. The student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver.
Introduce	The instructor may demonstrate a procedure or maneuver to a student, or may coach the student through the maneuver without demonstration. The student performs the procedures or maneuver with coaching as necessary. The student is responsible for knowledge of the procedures.
Practice	The performance of a maneuver or procedure by the student that may have been previously introduced in order to attain a specified level of performance.
Review	Demonstrated proficiency of a maneuver by the student.
Evaluate	Any flight designed to evaluate aircrew standardization that does not fit another category.

### 3.5.6 Program of Instruction Matrix.

PROGRAM OF INSTRUCTION MATRIX		
Program of Instruction (POI)	Symbol	Aviation Flying
Basic	B	Initial MOS/Skill Training
Series Conversion	S	Series Conversion from CH-53E to CH-53K
Conversion	S	Conversion from different model aircraft to CH-53K. (i.e. UH-1 to CH-53K)
Refresher	R	Non-flying status for 366 days or longer
Maintain	M	All individual who have attained CSP/MSP/CPD by initial POI assignment are re-assigned to the M POI to maintain proficiency.
Note -Transition Crew Chiefs shall be assigned to the Basic POI.		

3.5.7 Re-Qualification (TERFQ, AGQ, DCQ, UACQ, NSCQ, NSQ HLL, NSQ LLL, TGQ, DMQ, BIQ). Upon demonstration of proficiency, by flying those (R) coded events, IAW the Program Manual NAVMC 3500.14D, within the applicable stage in a specific core skill, aircrew may be re-qualified at the discretion of the Squadron Commanding Officer.

3.5.8 Instructor Re-Designation (TERFI, AGI, APFI, NSI, DMI). All Crew Chiefs that were previously designated as an Instructor returning to a flying status after being in a non-flying status for a period between 366 to 485 days shall fly the appropriate Refresher POI IAW with the above paragraph. Once the Crew Chief has demonstrated proficiency for the appropriate core skills and completed the appropriate pre-requisite may be re-designated an Instructor at the discretion of the Squadron Commanding Officer.

For those Crew Chiefs that were previously designated an Instructor returning to a flying status after being in a non-flying status for a period greater than 485 days shall be assigned to the Refresher POI per the MAWTS-1

CH-53 Course Catalog for the specific instructor syllabus. Once the Crew Chief has completed the required Refresher POI for the specific Instructor syllabus the Crew Chief may then be re-designated as an Instructor at the discretion of the Squadron Commanding Officer.

### 3.5.9 Aviation Training Forms (ATF)

All initial Basic (B), Series Conversion (S), and Conversion (S) POI events shall require an ATF. The ATF shall be filled out and signed by the Crew Chief Instructor as outlined by the instructor requirement per the individual T&R event. All ATFs shall have the NAVFLIR number logged and be marked either "SATISFACTORY" or "UNSATISFACTORY".

All initial Refresher (R) POI events shall require an ATF. The ATF shall be filled out and signed by the Crew Chief Instructor as outlined by the instructor requirement per the individual T&R event. All Refresher ATFs shall be annotated with a (R) after the T&R event code to annotate that the event was a refresher. All ATFs shall have the NAVFLIR number logged and be marked either "SATISFACTORY" or "UNSATISFACTORY".

All POI events deemed to be "UNSATISFACTORY" shall require an ATF. The ATF shall be filled out and signed by the Crew Chief Instructor as outlined by the instructor requirement per the individual T&R event. These events shall not be logged on the NAVFLIR for the individual nor shall they receive credit for conducting these events.

All individual instructors shall report to the Enlisted Aircrew Training Manager (EATM) within a 24 hour period and provide them with the completed ATFs for the event. The EATM shall ensure that all ATFs are properly logged in the individual's APR within 48 hours after the event has been completed.

All ATFs shall be logged in section 3 of the individual's APR jacket under the T&R Evaluated Flights tab. The ATFs shall be logged in order of the "T&R Tracker Table" with the highest numbered T&R code place on top. All Refresher ATFs shall be logged in the same manner except that they shall all be grouped together and placed on the top of the other ATFs and have the refresher syllabus letter signed by the Squadron Commanding Officer placed on top. All "UNSATISFACTORY" ATFs shall be logged in the same order and shall remain the individuals APR jacket. The T&R Tracker Table shall be placed in section 3 of the APR and placed on top of the T&R Evaluated Flights Tab. The tracker table is located in the MAWTS-1 course catalog Appendix F.

**3.5.10 ACADEMIC TRAINING:** The Academic syllabus is designed to ensure aircrew receive the proper academic training prior to starting a new phase and stage of training. Within each phase of training (0000-6000) 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. The Enlisted Aircrew Training Manager shall ensure that the appropriate academic/ground training event is manually updated in MSHARP and logged in the APR.

The purpose of the academic syllabus is to ensure that required academic courses for each phase/stage of training are completed and logged in M-SHARP for each Crew Member. A summary of academic classes required for all of the phases of training (0000-6000) are listed below with their corresponding T&R code. Where indicated, standardized academic training materials exist and may be obtained from the sponsoring activity.

The academic/ground training shall be complete IAW the phase and/or stage requirements and prerequisites. Upon completion, the Crew Chief shall report to the Enlisted Aircrew Training Manager (EATM) in the Operations Department.

The EATM shall manually update the training code in MSHARP.

The EATM shall log the academic/ground training event on the Academic Tracker.

The EATM shall ensure that the Academic Tracker is located in the individuals APR jacket in section 3 under the ground school tab.

Additional academic/ground training classes not listed as requirements in the T&R shall be logged on the Additional Academic Tracker and logged in section 3 of the individuals APR jacket under the ground school tab.

### 3.6 CORE INTRODUCTION PHASE

General. Prior to starting 1000 phase, aircrew must complete: flight physical, Naval Aviation Water Survival Training Program (NAWSTP) and Naval Aviation Physiology Training Program (NAPTP).

**Stages.** The following stages are included in the Core Skill Introduction phase.

CORE INTRODUCTION PHASE (1000)		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS	3.7.1	3-9
FAMILIARIZATION (FAM)	3.7.2	3-35
NIGHT FAMILIARIZATION (NFAM)	3.7.3	3-38
FORMATION (FORM)	3.7.4	3-40
CONFINED AREA LANDINGS (CAL)	3.7.5	3-41
EXTERNALS (EXT)	3.7.6	3-43
TERRAIN FLIGHT (TERF)	3.7.7	3-47
REVIEW (REV)	3.7.8	3-47
CORE SKILL INTRODUCTION CHECK (CSIX)	3.7.9	3-48

### 3.7 CORE INTRODUCTION STAGES

### 3.7.1 Academics (ACAD)

ACADEMIC STAGE		
STAGE	PARAGRAPH	PAGE NUMBER
COMPUTER BASED TRAINING (CBT)	3.7.1.1	3-9
LECTURES (LECT)	3.7.1.2	3-13
LAB TRAINING (LAB)	3.7.1.3	3-23
INSTRUCTOR (FRSI)	3.7.1.4	3-33
EVALUATION (EVAL)	3.7.1.5	3-34

#### 3.7.1.1 Computer Based Training (CBT)

**Purpose.** To provide the CCUI with a basic understanding of CH-53K systems and operating characteristics.

General. Instructors shall complete all applicable academic events in this phase of training prior to performing instructor duties.

**Crew Requirement.** CCI/CCUI

**CBT-0100      1.0      \*      B                          \*      G      CBT**

Goal. Provide the CCUI with CH-53 Historical background.

## Requirement

Introduce. General CH-53 historical information

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of CH-53: Historical information; NATOPS manual and related maintenance publications

External Syllabus Support. Electronic classroom

**Prerequisite.** LECT-0200

<b>CBT-0101</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
-----------------	------------	----------	------------	----------	----------	------------

Goal. Provide the CCUI with the basic knowledge required to navigate the CH-53K publications.

## Requirement

## Introduce

CH-53K NATOPS manual  
Training and Readiness (T&R) manual  
Interactive Electronic Technical Manual (IETM)

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of CH-53: NATOPS manual, T&R Manual, and IETM.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0100

<b>CBT-0102</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
-----------------	------------	----------	------------	----------	----------	------------

Goal. Introduce CCUI to the components of the cockpit and cabin interior and the identification of water lines, butt lines, and stations.

Requirement

Introduce

- Cabin interior
- Water lines, butt lines, & stations
- Cockpit
- Cabin emergency equipment
- Emergency Egress Locations

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of Cabin interior, Cockpit, waterlines, butt lines, stations, and Cabin emergency equipment.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0101

Reference. A1-H53XX-NFM-000

<b>CBT-0103</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
-----------------	------------	----------	------------	----------	----------	------------

Goal. Introduce the CCUI to the location of aircraft exterior components, panels, danger areas, and hand/foot holds.

Requirement

Introduce

- Helicopter dimensions
- Component locations
- Danger areas
- Hand/Foot Holds and safe walking areas.

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of: Helicopter dimensions, Component locations, hand/foot holds, and Danger areas

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0102

Reference. A1-H53XX-NFM-000

<b>CBT-0104</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
-----------------	------------	----------	------------	----------	----------	------------

Goal. Introduce CCUI to the blade and pylon fold and spread procedures and functions.

Requirement

Introduce

- Blade/Pylon fold/spread safety considerations
- Blade fold procedures
- Blade spread procedures
- Pylon fold procedures
- Pylon spread procedures

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of Blade/Pylon fold/spread safety considerations, Blade fold procedures, Blade spread procedures, Pylon fold procedures, and Pylon spread procedures.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

**CBT-0105      1.0      \*      B,S      \*      G      CBT**

Goal. Introduce Emergency Procedures (EPs) to the CCUI.

Requirement

Introduce

Fire EPs  
Smoke/Fumes EPs  
Emergency landing  
Landing gear system failure  
Transmission Failure  
Engine Failure  
Hydraulic Failure  
Electrical Failure

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of Fire, Smoke/Fumes, Emergency landing, Landing gear system failure, transmission failure, engine failure, hydraulic failure, and electrical failure.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

**CBT-0106      1.0      \*      B,S      \*      G      CBT**

Goal. Introduce the CCUI to taxi, take off and in-flight checks and procedures.

Requirement

Introduce

Hand and arm signals  
Aircraft clearance  
Pre-taxi, take off, in-flight, and landing checklists

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of Hand and arm signals, aircraft clearance, Pre-taxi, take off, in-flight, and landing checklists.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

**CBT-0107      1.0      \*      B,S      \*      G      CBT**

Goal. Introduce the CCUI to the functionality of cargo securing equipment and how to properly utilize the equipment to secure cargo.

Requirement

Introduce

Functionality of cargo securing equipment  
Proper use of cargo securing equipment  
Stowage of cargo securing equipment  
Cabin rollers and pallet guide rail and lock system  
Winch operation and procedures  
Cargo ramp and flippers operations and procedures

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of Functionality of cargo securing equipment, proper use of cargo securing equipment, stowage of cargo securing equipment, cabin rollers and pallet guide rail and lock system, winch operation and procedures, cargo ramp and flippers operations and procedures.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

<b>CBT-0108</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
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Goal. Introduce the CCUI to the multifunctional display system (MFD).

Requirement

Introduce

- MFD system operation
- Line Select Key (LSK) navigation
- MFD page manipulation

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of: MFD system operation, Line Select Key (LSK) navigation, and MFD page manipulation.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

<b>CBT-0109</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
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Goal. Familiarize the CCUI with basic weight and balance procedures.

Requirement

Introduce

- CG Limitations
- Control Display Unit (CDU)
- Aircraft axle weight limitations
- Proper loading of various weights IAW CG limitations.

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of weight and balance.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

<b>CBT-0110</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CBT</b>
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Goal. Familiarize the CCUI with the integrated vehicle health monitoring system (IVHMS).

Requirement

Introduce

- Theory of operation.
- Principles of operation for the engine indication & crew alerting system (EICAS)
- Understanding of warnings, cautions, and advisories (WCAs)
- Understanding of the systems (SYS) pages

Performance Standard. CCUI is responsible for completing statements to demonstrate understanding of IVHMS: Theory of operation, principles of EICAS, WCAs, and SYS pages.

External Syllabus Support. Electronic classroom

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000

### 3.7.1.2 Lectured Training (LECT)

Purpose. To provide the CCUI with a basic understanding of the procedures required to perform a CH-53K Daily Inspection and prepare the CCUI and helicopter for flight.

General. Crew Chief Instructors under training (CCIUT) shall complete all applicable 0500 stage events in this phase of training prior to performing instructor duties.

Crew Requirement. CCI/CCUI

#### **LECT-0200      2.0      \*      B      \*      G      CLSRM**

Goal. Provide Course Introduction Brief to ensure (CCUI) understands the expectations and requisite knowledge required to complete the CH-53 Crew Chief Training Course.

#### Requirement

##### Discuss

Course overview and design  
Study guide  
Class schedule  
Squadron check-in  
Academic handouts  
Course References  
Expectations of CCUI  
Schoolhouse procedures

##### Demonstrate

Classroom computer access  
Basic operation of Training Assets

#### Performance Standard

a) CCUI is responsible for knowledge of: Course overview and design, Study guide, Class schedule, Squadron check-in, Academic handouts, Course References, Expectations of CCUI and Schoolhouse procedures.

b) CCUI is responsible for observing while Instructor performs: Classroom computer access and Basic operation of Training Assets

Prerequisite. Squadron operations department check-in.

Reference. HMT-302 Marine Enlisted Aircrew Training SOP

#### **LECT-0201      1.5      \*      B      \*      G      CLSRM**

Goal. The CCUI understands the safety considerations for operations on the flightline and on the helicopter.

#### Requirement

##### Discuss

Personal Protective Equipment (PPE)  
Aircraft caution areas  
Flightline safety procedures

Performance Standard. CCUI is responsible for knowledge of procedures required for: PPE, aircraft caution areas, flightline safety procedures.

Reference. Naval Aviation Maintenance Program (NAMP)

#### **LECT-0202      1.5      \*      B      \*      G      CLSRM**

Goal. The CCUI understands the procedures, common terminology and hand and arm signals for basic ground handling and aircraft movement procedures and safety protocols.

#### Requirement

##### Discuss

Ground handling procedures

Fire extinguisher safety considerations  
Aircraft movement  
Required personnel and positions during aircraft movement  
Basic hand and arm signals

Performance Standard. CCUI is responsible for knowledge of procedures required for: Describe component location, operation, and procedures related to ground handling operations.

Prerequisite. CBT-0103

Reference. A1-H53XX-NFM-000, IETM

**LECT-0203    1.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, Theory of Operation and Daily inspection criteria for the aircraft interior.

Requirement

Discuss

Cockpit section  
Pilot and Copilot Seats  
Inceptors  
Co-pilot fire bottle  
General security, integrity, and FOD.  
Pilot overhead circuit breaker panel  
Cabin section  
IMARS  
APU accumulators  
Seats  
Escape hatches  
Fire bottles  
IFAKs  
Fuel, oil, and hydraulic lines  
Windows  
Cabin Miscellaneous Control Panel  
Crew Chief Communication Control Panel  
Gust Lock  
Cabin floor storage  
Cabin Rollers & Pallet Guides

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: aircraft interior.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0204    1.5    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the electronics compartments, Spot lights, Pitot and static tube ports, aerial refueling probe, and FLIR.

Requirement

Discuss

Right electronics compartment  
Battery circuit breakers  
Nose electronics compartment  
Left side electronics compartments  
Spot lights  
FLIR  
Pitot and static tube ports



### Aerial refueling probe

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: aircraft electronics bays, pitot and static tube ports, spot lights, aerial refueling probe, and FLIR

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0205    1.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for landing gear and all associated lines and hardware.

#### Requirement

##### Discuss

Nose gear door  
Safety pins  
Emergency blow down cylinders  
Nose landing gear  
Pitot static drain lines  
Main Landing Gear (MLG)  
MLG brake assembly  
Servicing and inflation.  
Shock struts for wear and leakage

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: landing gear.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0206    1.5    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the refuel panel, sponsons and left and right fuselage.

#### Requirement

##### Discuss

Pressure refueling panel  
Sump drain valves  
Engine drain outlets  
Gravity fill caps  
Sponson  
Fuselage  
Formation lights  
Position lights

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of refuel panel, sponsons, and left and right fuselage.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0207    1.5    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for all components associated with engines, nose gear boxes, and engine air particle protection system (EAPPS).

#### Requirement

##### Discuss

## Engines

Engine Nacelles  
Engine drains and fluid lines for leakage  
Fire extinguisher lines and sensors  
Starter system  
Oil level and servicing  
Engine mounts  
Exhaust mounts and tailpipe  
T5 assembly  
Fuel system  
Bleed air lines  
Electrical system  
Variable Geometry Actuators (VGA)  
Full authority digital engine control (FADEC)  
Fuel metering unit (FMU)  
EAPPS  
EAPPS blower and latches  
NGB  
Chip detector  
Filler cap and servicing  
Oil filter  
Oil cooler  
Impeller  
NGB fairing  
Output drive shafts & coupling assemblies  
Support bearing  
Mid shaft hangar bearing sensor

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: Engine, EAPPS, and NGB.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

<b>LECT-0208</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CLSRM</b>
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Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the aft main rotor pylon.

### Requirement

#### Discuss

Rotor brake system  
On board inert gas generating system (OBIGGS)  
Blade fold safety valve  
MGB oil cooler system  
2<sup>nd</sup> stage hydraulic heat exchanger  
2<sup>nd</sup> stage hydraulic system

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: Aft main rotor pylon.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

<b>LECT-0209</b>	<b>1.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>CLSRM</b>
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Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the tail drive shafts and disconnect coupling.

Requirement

Discuss

Tail driveshaft assemblies  
Tail driveshaft flexible diaphragm couplings  
Tail driveshaft hangar bearings & sensors  
Disconnect coupling  
Cleaning and greasing  
Formation lights

Performance Standard

- a) CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: tail driveshaft's and disconnect coupling.
- b) CCUI is responsible for understanding procedures required to clean and grease the disconnect coupling.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0210      1.5      \*      B,S      \*      G      CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the Tail skid, Intermediate gearbox, Tail pylon and stabilizer structure, rotor positioner, and tail rotor actuator.

Requirement

Discuss

Tail pylon and stabilizer structure  
Intermediate gearbox  
    Chip detector  
    Intermediate gearbox sight gauge, filler cap, & servicing  
    Intermediate gearbox input and output flexible diaphragm couplings  
Rotor positioner  
Tail rotor actuator  
Tail bumper rod  
Tail bumper actuator

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: tail pylon and stabilizer structure, intermediate gearbox, rotor positioner, tail rotor actuator, and tail skid.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0211      1.0      \*      B,S      \*      G      CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the tail rotor head, tail rotor servo, tail gear box, and tail rotor blades.

Requirement

Discuss

Tail rotor head  
Horizontal stabilizer  
Pitch beam  
Pitch change shaft  
Tail rotor servo  
Tail gearbox  
    Sight gauge, filler cap, & servicing  
    Fairings  
Tail rotor blades  
    Tip drain hole

Blade pitch links  
Formation lights

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: tail rotor head, tail gearbox, tail rotor servo, and tail rotor blades.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0212    1.5    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the Main gearbox.

Requirement

Discuss

Main gearbox  
Main gearbox remote mounting unit (RMU)  
Chip detectors  
Oil filters  
Sight gauge, filler cap, & servicing  
Pressure sensors  
Gust lock  
Main rotor shaft seal runner  
Oil cooler lines  
#1 & 2 Generators and permanent magnetic alternators (PMAs)

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: main gearbox.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0213    1.5    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the forward main rotor pylon compartment.

Requirement

Discuss

1<sup>st</sup> stage hydraulic system  
1<sup>st</sup> stage hydraulic heat exchanger  
Utility hydraulic system  
Utility hydraulic heat exchanger  
Ground operations pump (GOP)  
APU start motor and accumulators

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: main rotor pylon hydraulics.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0214    1.5    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the auxiliary power unit (APU) and environmental control system (ECS).

Requirement

Discuss

APU

Exhaust  
Intake  
Barrier filter  
Fuel system  
Oil system & servicing  
Engine control harness  
#3 APU generator

ECS

Components  
Ducting  
Hydraulic lines  
Condenser bracket  
Electronic control unit

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: APU and ECS.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0215    1.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the main rotor head and main rotor blades.

Requirement

Discuss

Main rotor head

- Hub, Yokes, Sleeves, and Hinge cuff assemblies
- CF spherical and centering elastomeric bearings
- Dampers
- Droop and flap stops
- Pitch control rods (PCRs) and PCR bearings
- PCR locking keys
- Rotating and stationary scissors
- Upper servo
- MR servo output bearing
- Electrical harnesses
- Pitch locks
- Hydraulic hoses
- Blade lock pins

Main rotor blades

- Hinge cuff
- Root and tip drain holes
- Tip cap
- Bonding jumpers and wire harnesses
- Security, integrity

Performance Standard. CCUI is responsible for knowledge of nomenclature, Theories of Operation, and procedures required to perform a daily inspection of: main rotor head and main rotor blades.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0216    1.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the mission systems.

Requirement

Discuss

Pendants  
Emergency Release Mechanism (ERMS)  
Center hook tension member  
Electrical connectors  
Grounding strap  
Load cells  
Cargo hook/pendant retrieval line  
Cartridge activated device(s) (CADs)  
Pendant covers  
Breakaway safety wire  
Cargo hook lights  
Aircrew portable pendant control  
Operational check of cargo winch(s)  
Fast rope system  
Ensuring proper aircraft configuration

Performance Standard. CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: mission systems.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0217    1.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize CCUI with the inspection criteria for performing a turnaround inspection.

Requirement

Discuss

Turnaround inspection criteria  
Turnaround inspection  
Fuel samples

Performance Standard. CCUI is responsible for knowledge of procedures required to perform: turnaround inspection and fuel samples.

Prerequisite. LECT-0201, LECT-0202

Reference. IETM

**LECT-0218    1.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize the CCUI with the procedures for Auxiliary Power Unit (APU) operation.

Requirement

Discuss

APU preflight/inspection  
Cockpit preflight/inspection  
Safety precautions  
Fire bottle procedures  
Hand and arm signals  
APU operation  
ECS operations

Performance Standard. CCUI is responsible for knowledge of procedures required to perform: APU preflight/inspection, cockpit preflight/inspection, safety precautions, fire bottle procedures, hand and arm signals, and APU operation.

Prerequisite LECT-0201, LECT-0202

Reference. A1-H53XX-NFM-000

**LECT-0219    2.5    \*    B    \*    G    CLSRM**

Goal. Familiarize the CCUI with the fundamentals of security, integrity, FOD, and leakage and introduce the responsibilities associated with the plane captain program.

Requirement

Discuss

Fundamentals and qualities that make up a plane captain  
Plane captain program

Performance Standard. CCUI is responsible for knowledge of procedures required for: fundamentals and qualities that make up a plane captain, and the plane captain program.

Reference. COMNAVFORINST 4790.2

**LECT-0220    1.0    \*    B    \*    G    CLSRM**

Goal. Familiarize the CCUI with the proper CH-53K egress procedures.

Requirement

Discuss

Water egress procedures  
Proper egress procedures  
CH-53K egress points

Performance Standard. CCUI is responsible for knowledge of: water egress procedures, proper egress procedures, and CH-53K egress points.

Prerequisite. LECT-0201

Reference. A1-H53XX-NFM-000

**LECT-0221    3.0    \*    B,S    \*    G    CLSRM**

Goal. Familiarize the CCUI with the proper CH-53K preflight, prestart, and post flight inspections.

Requirement

Discuss

Preflight procedures  
    Aircraft configuration  
    Visual inspection  
    Panel check  
Prestart procedures  
    PFBIT  
    APU operation  
Post flight procedures  
    Visual inspection  
    A/C tie down procedures

Performance Standard. CCUI is responsible for knowledge of: preflight, prestart, and post flight inspections.

Prerequisite. LECT-0201, CBT-0108

Reference. A1-H53XX-NFM-000

**LECT-0222    3.5    \*    B    \*    G    CLSRM**

Goal. Introduce aircrew responsibilities.

Requirement

Discuss

Flight schedules  
Taxiing & In-flight responsibilities  
Hot seat procedures

Training and Readiness manual (T&R)  
Flight equipment  
Aircraft turn-up/shut down  
Standard Terminology  
NATOPs briefing  
Confined Area Landings (CALs)  
Pressure refueling  
ICS procedures

Performance Standard. CCUI is responsible for knowledge of: flight schedules, flight equipment, aircraft turn-up/shutdown, standard terminology, NATOPS briefing, CALs, and pressure refueling.

Prerequisite. LECT-0201, CBT-0106

Reference. A1-H53XX-NFM-000, NTTP 3-22.3-53

**LECT-0223      1.0      \*      B      \*      G      CLSRM**

Goal. Introduce general flight information.

Requirement

Discuss

Weather  
Automatic Terminal Information Service (ATIS)  
Navigation  
Standard Terminology  
Radio calls

Performance Standard. CCUI is responsible for knowledge of general flight information.

Prerequisite. FAM-1104

Reference. CNAF M-3710.7

**LECT-0224      1.0      \*      B,S      \*      G      CLSRM**

Goal. Familiarize the CCUI with external transportation of cargo, standard terminology, and operating with a Helicopter Support Team (HST).

Requirement

Discuss

Single point external cargo operations  
Dual point external cargo operations  
Independent load cargo operations  
Emergency jettison of cargo  
Safety considerations while operating with HST

Performance Standard. CCUI is responsible for knowledge of procedures required to perform: single point external cargo operations, dual point external cargo operations, independent load cargo operations, emergency jettison of cargo, and safety considerations while operating with HST.

Prerequisite. LECT-0201

Reference. A1-H53XX-NFM-000, NTTP 3-22.3-53

**LECT-0225      1.0      \*      B      \*      G      CLSRM**

Goal. Familiarize the CCUI with terrain flight maneuvers and common terminology.

Requirement

Discuss

3 types of terrain flight  
Terrain flight maneuvers  
Aircraft clearances



Standard terminology

Performance Standard. CCUI is responsible for knowledge of procedures required to perform 3 types of terrain flight, terrain flight maneuvers, aircraft clearances, standard terminology.

Reference. NTTP 3-22.3-53

**LECT-0226      1.0      \*      B      \*      G      CLSRM**

Goal. Familiarize the CCUI with formation flight operations.

Requirement

Discuss

Standard terminology  
Formation flight considerations  
Aircraft clearances

Performance Standard. CCUI is responsible for knowledge of procedures required to perform formation flight operations.

Reference. NTTP 3-22.3-53

### 3.7.1.3 LAB Training (LAB)

Purpose. To provide the CCUI with basic skills required to perform CH-53K Daily and Turnaround Inspections and prepare the CCUI and helicopter for flight.

General

Instructors shall

- a) Complete all applicable 0500 stage events in this phase of training prior to performing instructor duties.
- b) Be a designated CH-53K Plane Captain.

Crew Requirement. CCI/CCUI

**LAB-0300      2.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required for promoting safe procedures and considerations when conducting ground operations on and/or around the aircraft.

Requirement

Discuss

Procedures for entering/exiting rotor arc  
Engine exhaust danger areas  
Fire bottle considerations during APU and engine start  
Movement of aircraft

Introduce

Entering/exiting rotor arc  
Movement of aircraft

Performance Standard

- a) CCUI is responsible for recognizing and avoiding: rotor arc hazard areas, procedures for entering/exiting rotor arc, engine exhaust danger areas, and fire bottle considerations during APU and engine start.
- b) CCUI is responsible for performing procedures required for: movement of aircraft Hand and arm signals and entering/exiting rotor arc.

Prerequisite. LECT-0201, LECT-0202

Reference. A1-H53XX-NFM-000

**LAB-0301      2.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the aircraft interior.

Requirement

Introduce Inspection of:

Cockpit section  
Pilot and Copilot Seats  
Interceptors  
Co-pilot fire bottle  
General security, integrity, and FOD.  
Pilot overhead circuit breaker panel  
Cabin section  
IMARS  
APU accumulators  
Seats  
Escape Hatches  
Fire bottles  
IFAKs  
Fuel, oil, and hydraulic lines  
Windows  
Cabin Miscellaneous Control Panel  
Cabin Communication Control Panel  
Gust Lock  
Cabin floor storage  
Cabin Rollers & Pallet Guides

Performance Standard. CCUI is responsible for performing procedures required to inspect: cockpit section and cabin section.

Prerequisite. LECT-0203

Reference. IETM

<b>LAB-0302</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>S/A</b>
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Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the electronics compartments, spot lights, pitot and static tube ports, aerial refueling probe, and FLIR.

Requirement

Introduce Inspection of:

Right electronics compartment  
Battery circuit breakers  
Nose electronics compartment  
Left side electronics compartments  
Spot lights  
Pitot and static tube ports  
FLIR  
Aerial refueling probe

Performance Standard. CCUI is responsible for performing procedures required to inspect: electronics compartments, spot lights, pitot and static tube ports, aerial refueling probe, and FLIR.

Prerequisite. LECT-0204

Reference. IETM

<b>LAB-0303</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>S/A</b>
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Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the landing gear and all associated lines and hardware.

Requirement

Introduce Inspection of:

Nose landing gear

Nose gear door  
Emergency blow down cylinders  
Pitot static drain lines  
Main Landing Gear (MLG)  
MLG brake assembly  
Servicing and inflation.  
Shock struts for wear and leakage

Performance Standard. CCUI is responsible for performing procedures required to inspect: landing gear.

Prerequisite. LECT-0205

Reference. IETM

**LAB-0304      1.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the refuel panel, sponsons and left and right fuselage.

Requirement

Introduce Inspection of:

Pressure refueling panel  
Sump drain valves  
Engine drain outlets  
Gravity fill caps  
Sponson  
Fuselage  
Formation lights  
Position lights

Performance Standard. CCUI is responsible for performing procedures required to inspect: refuel panel, sponsons and left and right fuselage.

Prerequisite. LECT 0206

Reference. IETM

**LAB-0305      2.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the engines, nose gear boxes and engine air particle protection system (EAPPS).

Requirement

Introduce Inspection of:

Engine  
Engine Nacelles  
Engine drains and fluid lines for leakage  
Fire extinguisher lines and sensors  
Starter system  
Oil level and servicing  
Engine mounts  
Exhaust mounts and tailpipe  
T5 assembly  
Fuel system  
Bleed air lines  
Electrical system  
Variable Geometry Actuators (VGA)  
Full authority digital engine control (FADEC)  
Fuel metering unit (FMU)

EAPPS

EAPPS blower and latches

**NGB**

Chip detector  
Filler cap and servicing  
Oil filter  
Oil cooler  
Impeller  
NGB fairing  
Output drive shafts & coupling assemblies  
Support bearing  
Mid shaft hangar bearing sensor

Performance Standard. CCUI is responsible for performing procedures required to inspect: engine, EAPPS, and NGB.

Prerequisite. LECT-0207s

Reference. IETM

**LAB-0306      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the aft main rotor pylon.

Requirement

Introduce Inspection of:

Rotor brake system  
On board inert gas generating system (OBIGGS)  
Blade fold safety valve  
MGB oil cooler system  
2<sup>nd</sup> stage hydraulic heat exchanger  
2<sup>nd</sup> stage hydraulic system

Performance Standard. CCUI is responsible for performing procedures required to inspect: aft main rotor pylon.

Prerequisite. LECT-0208

Reference. IETM

**LAB-0307      1.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the tail drive shafts and disconnect coupling.

Requirement

Introduce Inspection of:

Tail driveshaft assemblies  
Tail driveshaft flexible diaphragm couplings  
Tail driveshaft hangar bearings & sensors  
Disconnect coupling  
Cleaning and greasing  
Formation lights

Performance Standard

a) CCUI is responsible for performing procedures required to inspect: tail driveshafts and disconnect coupling for wear.

b) CCUI is responsible for performing procedures required to: clean and grease disconnect coupling.

Prerequisite. LECT-0209

Reference. IETM

**LAB-0308      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the tail skid, Intermediate Gearbox (IGB), tail pylon and stabilizer structure, rotor positioner, and tail rotor actuator.

Requirement

Introduce Inspection of:

- Tail pylon and stabilizer structure
- Intermediate gearbox
  - Chip detector
  - Sight gauge, filler cap, & servicing
  - Input and output flexible diaphragm couplings
- Rotor positioner
- Tail rotor actuator
- Tail bumper rod
- Tail bumper actuator

Performance Standard. CCUI is responsible for performing procedures required to inspect: tail pylon and stabilizer structure, intermediate gearbox, rotor positioner, tail rotor actuator, and tail skid.

Prerequisite. LECT-0210

Reference. IETM

**LAB-0309      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the tail rotor head, tail rotor servo, tail gear box, and tail rotor blades.

Requirement

Introduce inspection of:

- Tail rotor head
- Horizontal stabilizer
- Pitch beam
- Pitch change shaft
- Tail rotor servo
- Tail gearbox
  - Sight gauge, filler cap, & servicing
  - Fairings
- Tail rotor blades
  - Tip drain hole
  - Blade pitch links
- Formation lights

Performance Standard. CCUI is responsible for performing procedures required to inspect: tail rotor head, tail gearbox, tail rotor servo, and tail rotor blades.

Prerequisite. LECT-0211

Reference. IETM

**LAB-0310      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the Main gearbox.

Requirement

Introduce Inspection of:

- Main gearbox
  - Main gearbox remote mounting unit (RMU)
  - Chip detectors
  - Oil filters
  - Sight gauge, filler cap, & servicing

Pressure sensors  
Gust lock  
Main rotor shaft seal runner  
Oil cooler lines  
#1 & 2 Generators and permanent magnetic alternators (PMAs)

Performance Standard. CCUI is responsible for performing procedures required to inspect: main gearbox, main rotor primary servo cylinders and control rods, and flight control mixer unit.

Prerequisite. LECT-0212

Reference. IETM

**LAB-0311      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the forward main rotor pylon.

Requirement

Introduce Inspection of:

1<sup>st</sup> stage hydraulic system  
1<sup>st</sup> stage hydraulic heat exchanger  
Utility hydraulic system  
Utility hydraulic heat exchanger  
Ground operations pump (GOP)  
APU start motor and accumulators

Performance Standard. CCUI is responsible for performing procedures required to inspect: forward main rotor pylon.

Prerequisite. LECT-0213

Reference. IETM

**LAB-0312      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the auxiliary power unit (APU) and environmental control system (ECS).

Requirement

Introduce Inspection of:

APU  
Exhaust  
Intake  
Barrier filter  
Fuel system  
Oil system & servicing  
Engine control harness  
#3 APU generator  
  
ECS  
Components  
Ducting  
Hydraulic lines  
Condenser bracket  
Electronic control unit

Performance Standard. CCUI is responsible for performing procedures required to inspect: APU and ECS.

Prerequisite. LECT-0214

Reference. IETM

**LAB-0313      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of the main rotor head and main rotor blades.

Requirement

Introduce inspection of:

Main rotor head

Hub, Yokes, Sleeves, and Hinge cuff assemblies  
CF spherical and centering elastomeric bearings  
Dampers  
Droop and flap stops  
Pitch control rods (PCRs) and PCR bearings  
PCR locking keys  
Rotating and stationary scissors  
Upper servo  
MR servo output bearing  
Electrical harnesses  
Pitch locks  
Hydraulic hoses  
Blade lock pins

Main rotor blades

Hinge cuff  
Root and tip drain holes  
Tip cap  
Bonding jumpers and wire harnesses  
Security, integrity

Performance Standard. CCUI is responsible for performing procedures required to inspect: main rotor head, and main rotor blades.

Prerequisite. LECT-0215

Reference. IETM

**LAB-0314      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a daily inspection of mission systems and ability to configure aircraft for assigned missions.

Requirement

Introduce Inspection of:

Cargo hooks and pendants  
Center hook tension member  
Emergency release mechanism  
Electrical connectors  
Grounding strap  
Load cells  
Cargo hook/pendant retrieval line  
Cartridge activated device(s) (CADs)  
Pendant covers  
Breakaway safety wire  
Cargo hook lights  
Forward and Aft cargo hook and pendant  
Aircrew portable pendant control  
Fast Rope System  
Cargo winch(s)

Introduce performing

Cargo hook system operational check and cargo jettison test  
Operational check of cargo winch(s).

Operational check of utility hoist  
Operational check of snatch blocks

Demonstrate

Ensuring proper aircraft configuration

Performance Standard

- a) CCUI is responsible for performing procedures required to inspect: forward, center, and back cargo hook and pendants, aircrew portable pendant control, and fast rope system.
- b) CCUI is responsible for performing: cargo hook system operational check and cargo winch operational check.
- c) CCUI is responsible for ensuring proper aircraft configuration.

Prerequisite. LECT-0216

Reference. IETM

**LAB-0315      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform a turnaround inspection.

Requirement

Introduce

Turnaround inspection  
Fuel sample procedures

Performance Standard. CCUI is responsible for performing: turnaround inspection and fuel samples.

Prerequisite. LECT-0217

Reference. IETM

**LAB-0316      1.5      \*      B      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform passenger embarkation and debarkation procedures.

Requirement

Introduce

Aircraft configuration  
Passenger Brief  
Passenger PPE  
Passenger embarkation  
Passenger debarkation

Performance Standard. CCUI is responsible for performing: passenger embarkation and debarkation.

Prerequisite. CBT-0107

Reference. A1-H53XX-NFM-000

**LAB-0317      4.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform loading, securing, and unloading of warehouse palletized cargo.

Requirement

Introduce

Weight and Balance Considerations  
MFD Utilization  
Aircraft configuration  
Rollers  
Straps  
Chains



Common Cargo Nets  
Pallet Buildup  
Winch operations  
Tie down procedures  
Hand and arm signals

Performance Standard. CCUI is responsible for performing: loading, securing, and unloading of warehouse palletized cargo.

Prerequisite. CBT-0107, CBT-0108, CBT-0109

Reference. A1-H53XX-NFM-000, IETM

**LAB-0318      4.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform loading, securing, and unloading of 463L (type I and type II) palletized cargo.

Requirement

Introduce

Weight and Balance Considerations  
MFD Utilization  
Aircraft configuration  
Rollers  
Straps  
Chains  
Rails/Rail locks  
Common Cargo Nets  
Pallet Buildup  
Tie down procedures  
Pallet rail locking procedures  
Winch operations  
Hand and arm signals

Performance Standard. CCUI is responsible for performing: loading, securing, and unloading of 463L (type I and type II) palletized cargo.

Prerequisite. CBT-0107, CBT-0108, CBT-0109

Reference. A1-H53XX-NFM-000, IETM

**LAB-0319      4.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform loading, securing, and unloading non-palletized cargo and rolling stock.

Requirement

Introduce

Weight and Balance Considerations  
MFD Utilization  
Non-palletized cargo  
Aircraft configuration  
Straps  
Chains  
Common Cargo Nets  
Loading procedures  
Winch operations  
Tie down procedures  
Hand and Arm Signals  
Rolling stock  
Loading procedures

Brakes  
Aircraft configuration  
Straps  
Chains  
Tie down procedures  
Winch operations  
Hand and arm signals

Performance Standard. CCUI is responsible for performing: loading, securing, and unloading of non-palletized cargo and rolling stock.

Prerequisite. CBT-0107, CBT-0108, CBT-0109

Reference. A1-H53XX-NFM-000, IETM

<b>LAB-0320</b>	<b>4.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>S/A</b>
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Goal. Provide the CCUI with the fundamental skills required to perform blade and pylon fold and spread procedures.

Requirement

Introduce

MFD Utilization  
Blade Fold/Spread  
Automatic  
Semi-Automatic  
Pylon Fold/Spread  
Automatic  
Semi-Automatic  
Manual (Power on)  
Hydraulic Valves  
Exterior Switch  
Manual (Power off)

Performance Standard. CCUI is responsible for performing: blade and pylon fold and spread procedures.

Prerequisite. CBT-0104, LAB-0300

Reference. A1-H53XX-NFM-000

<b>LAB-0321</b>	<b>4.0</b>	<b>*</b>	<b>B,S</b>	<b>*</b>	<b>G</b>	<b>S/A</b>
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Goal. Provide the CCUI with the fundamental skills required to perform preflight and post flight procedures.

Requirement

Introduce

Preflight Inspection  
Exterior  
Interior  
Mission Systems (as applicable)  
Panel Check  
Preflight Sign-off  
Post flight Inspection  
Exterior  
Interior

Performance Standard. CCUI is responsible for performing: preflight and post flight procedures.

Prerequisite. LECT-0201, LECT-0221

Reference. A1-H53XX-NFM-000

**LAB-0322      1.0      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required for Auxiliary Power Unit (APU) operation.

Requirement

Introduce

APU preflight/inspection  
Cockpit preflight/inspection  
Safety precautions  
Fire bottle procedures  
Hand and arm signals  
APU operation

Performance Standard. CCUI is responsible for performing: APU preflight/inspection, cockpit preflight/inspection, safety precautions, fire bottle procedures, hand and arm signals, and APU operation.

Prerequisite. LECT-0218

Reference. A1-H53XX-NFM-000

**LAB-0323      1.5      \*      B,S      \*      G      S/A**

Goal. Provide the CCUI with the fundamental skills required to perform aircraft prestart procedures.

Requirement

Introduce

MFD Utilization  
Pre-Flight Built In Test (PFBIT)  
Cockpit Configuration

Performance Standard. CCUI is responsible for performing: aircraft prestart procedures.

Prerequisite. LECT-0201, LECT-0221, LAB-0321, LAB-0322

Reference. A1-H53XX-NFM-000

**LAB-0324      1.5      \*      B,S      G/A      STATIC 1 CH-53**

Goal. Discuss and demonstrate the proper egress procedures.

Requirement

Discuss

Water egress procedures  
Proper egress procedures

Introduce

Proper egress procedures

Performance Standard. CCUI is responsible for performing proper egress procedures.

Prerequisite. LECT 0220

Reference. A1-H53XX-NFM-000

3.7.1.4 Instructor Events

Purpose. To ensure the CCI possesses the requisite knowledge and technical skills required to instruct CH-53 Aircrew Core Skill Introduction FRS Academic Phase training events.

General. CCIUT may complete these events in conjunction with the CCUI CH-53 Aircrew Core Skill Introduction FRS Academic Phase syllabus. CIUT shall be evaluated by a qualified CH-53 Aircrew Core Skill Introduction FRS Instructors prior to performing instructor duties.

Crew Requirement. CCI/CCIUT

**FRSI-0500      2.0      \*      B      \*      G      CLSRM**

**Goal.** Provide Crew Chief Instructor Under Training (CCIUT) with the skills required to conduct a Computer Aided Instruction (CAI) period of instruction.

### Requirement

### Introduce. Conducting CAI

Performance Standard. CCIUT is responsible for: properly conducting a CAI period of instruction.

External Syllabus Support. Electronic classroom

Reference. HMT-302 Marine Enlisted Aircrew Training SOP

<b>FRSI-0501</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>*</b>	<b>G</b>	<b>CLSRM</b>
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Goal. Provide CCIUT with the skills required to conduct a LAB period of instruction.

### Requirement

## Introduce. Conducting LAB

**Performance Standard.** CCIUT is responsible for: properly conducting a LAB period of instruction.

External Syllabus Support. Electronic classroom

Prerequisite. FRSI 0500

Reference. HMT-302 Marine Enlisted Aircrew Training SOP

<b>FRSI-0502</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>*</b>	<b>G</b>	<b>CLSRM</b>
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Goal. Provide CCIUT with the opportunity to demonstrate mastery of instructional skills.

### Requirement

Review. CCIUTs ability to properly conduct period of instruction

Performance Standard. CCIUT is responsible for: demonstrating ability to properly conduct period of instruction.

External Syllabus Support. Electronic classroom

Prerequisite. FRSI 0501

Reference. HMHT-302 Marine Enlisted Aircrew Training SOP

**FRSI-0503      2.0      \*      B      \*      G      CLSRM**

Goal. Review Crew Chief Instructors (CCI) ability to conduct period of instruction.

### Requirement

### Review. Instructional techniques

**Performance Standard.** CCIUT is responsible for: demonstrating proper instructional techniques by properly conducting a period of instruction.

External Syllabus Support. Electronic classroom

Prerequisite. FRSI 0502

Reference. HMT-302 Marine Enlisted Aircrew Training SOP

#### 3.7.1.5 Evaluation Events (EVAL)

**Purpose.** To ensure CCUI possess the requisite knowledge and technical skills required perform CH-53 daily and turnaround inspections.

General. CCUI shall complete these events in conjunction with COMNAVAIRFORINST 4790.2A requirements.

Crew Requirement. FRSI, CCUI

### 3.7.2 Familiarization (FAM)

Purpose. To familiarize Aircrew with CH-53 operations and emergency procedures.

General. Aircrew (CCUI) may fly these events in conjunction with the Pilot syllabus.

Crew Requirement. P/CP/FRSI/CCUI

#### Aircraft Requirement

FAM-1101, 1103, & 1106 require cold start aircraft.

FAM-1105 requires shutdown at completion of flight.

Academic Training. Instructor led classroom instruction on applicable publications and directives. Crew Resource Management class.

**SFAM-1100    1.5    \*    B    D    S    1 CH-53K**

Goal. Introduce CCUI to standard aircrew communication and CRM principles.

Requirement. CCUI will be introduced to and perform standard communication and CRM principles.

#### Practice

Crew Resource Management (CRM)

Standard Terminology

Utilization of ICS

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew Procedures Trainer

Instructor. FRSI

Prerequisite. LECT-0222, CRM-6003

**FAM-1101    1.5    \*    B    D    A    1 CH-53K**

Goal. Introduce basic aircraft duties and procedures for normal flight operations while incorporating CRM.

#### Requirement

##### Discuss

Aircrew/Mission Brief

##### Demonstrate

Aircrew/Mission Brief

Preflight

Prestart

APU Operation

Engine Start

Pre-Taxi/Taxi

Pre- Takeoff/Takeoff

Inflight Responsibilities

Pre-Landing/Landing

Refueling Procedures

Shutdown Procedures

Hot seat Procedures

ICS/ISWICS

IMARS

Post Flight

Debrief

CRM

##### Practice

Utilize ICS/ISWICS

Utilize IMARS

##### Review

Emergency Egress  
Emergency Egress Equipment

Performance Standard. Be introduced to all procedures and operations Per CH-53 NATOPS and FRS Maneuver Description Guide.

Required Equipment. Requires a cold start aircraft.

Instructor. CCI

Prerequisite. SFAM-1100

**FAM-1102      1.5      \*      B      D      A      1 CH-53K**

Goal. Practice basic aircrew responsibilities while incorporating CRM.

Requirement

Practice

Aircrew/Mission Brief  
Preflight  
Prestart  
APU Operation  
Engine Start  
Pre-taxi/taxi  
Pre-takeoff/takeoff  
In-Flight Responsibilities  
Pre-landing/landing  
Refueling procedures  
Shutdown procedures  
Hotseat procedures  
ICS/ISWICS  
IMARS  
Post flight  
Debrief  
CRM

Performance Standard. Conduct all procedures and operations IAW CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. FAM-1101

**FAM-1103      1.5      \*      B      D      A      1 CH-53K**

Goal. Practice basic aircrew responsibilities while incorporating CRM Part 2

Requirement

Discuss

Aircraft Configuration

Introduce

Aircraft Configuration

Practice

Aircrew/Mission Brief  
Preflight  
Prestart  
APU Operation  
Engine Start  
Pre-taxi/taxi  
Pre-takeoff/takeoff  
In-Flight Responsibilities

Pre-landing/landing  
Refueling procedures  
Shutdown procedures  
Hotseat procedures  
ICS/ISWICS  
Post flight  
Debrief  
CRM

Review

IMARS

Performance Standard. Conduct all procedures and operations IAW CH-53 NATOPS and FRS Maneuver Description Guide.

Required Equipment. Requires a cold start aircraft.

Instructor. CCI

Prerequisite. FAM-1102

**FAM-1104      1.5      \*      B      D      A      1 CH-53K**

Goal. Practice and Review Aircrew duties while incorporating emergency procedures and CRM.

Requirement

Introduce

Emergency procedures

Practice

Aircrew/Mission Brief  
Preflight  
Prestart  
APU Operation  
In-Flight Responsibilities  
Shutdown procedures  
ICS/ISWICS  
Debrief

Review

Engine Start  
Aircraft Configuration  
Pre-taxi/taxi  
Pre-takeoff/takeoff  
Pre-landing/landing  
Refueling procedures  
Hotseat procedures  
Post flight  
CRM

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. FAM-1103

**FAM-1105      1.5      \*      B,S      D      A      1 CH-53K**

Goal. Practice and Review Aircrew duties while incorporating emergency procedures and CRM part 2.

Requirement

Introduce

Emergency procedures

Practice

Aircrew/Mission Brief  
Preflight  
Prestart  
APU Operation  
In-Flight Responsibilities  
Debrief

Review

Shutdown procedures  
ICS/ISWICS

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Required Equipment. Requires shutdown at completion of flight.

Instructor. CCI

Prerequisite. FAM-1104

**FAM-1106      1.5      \*      B      D      A      1 CH-53K**

Goal. Review Aircrew duties while incorporating emergency procedures and CRM.

Requirement

Review

Aircrew/Mission Brief  
Preflight  
Prestart  
APU Operation  
In-Flight Responsibilities  
Debrief

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Required Equipment. Requires cold start aircraft.

Instructor. FRSI

Prerequisite. FAM-1105

3.7.3 Night Familiarization (NFAM)

Purpose. To familiarize Aircrew with CH-53 operations at night.

General. Aircrew (CCUI) may fly these events in conjunction with the pilot syllabus. Instructors (CCI) shall be a NSI or NSFI for NFAM-1200 and NFAM-1201.

Crew Requirement. CCI/CCUI

Academic Training. Instructor led classroom instruction on applicable publications and directives.

**SNFAM-1200      1.5      \*      B      NS      S      MCAT**

Goal. Introduce Night Systems while incorporating CRM.

Requirement

Discuss

Night operation safety  
Night Vision Goggles (NVGs)  
Night Vision Goggles emergency procedures

Introduce

Lookout doctrine  
Obstacle clearance/Hazards  
NS Aircraft considerations/configurations



Practice

NVG operation  
NVG goggle/de-goggle procedures  
Adjustment procedures

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew Procedures Trainer

Instructor. CCI and NSFI or NSI

Prerequisite. CAL-1600, Night Imaging and Threat Evaluation (NITE) Lab Instruction

**NFAM-1201    1.5    \*    B    NS    A    1 CH-53K**

Goal. Practice and review night systems while incorporating CRM.

Requirement

Introduce

Monitoring procedures  
In-Flight support duties

Practice

NVG operation  
Night Vision Goggles emergency procedures  
Lookout doctrine  
Obstacle clearance/Hazards  
NS Aircraft considerations/configurations

Review

NVG goggle/de-goggle procedures  
Adjustment procedures

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI and NSFI or NSI

Prerequisite. SNFAM-1200

**NFAM-1202    1.5    \*    B    NS    A    1 CH-53K**

Goal. Practice night systems while incorporating CRM.

Requirement

Practice

NVG operation  
Night Vision Goggles emergency procedures  
Lookout doctrine  
Obstacle clearance/Hazards  
NS Aircraft considerations/configurations  
Monitoring procedures  
In-Flight support duties

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI and NSFI or NSI

Prerequisite. NFAM-1201

**NFAM-1203    1.5    \*    B    NS    A    1 CH-53K**

Goal. Review night systems while incorporating CRM.

Requirement

Review

NVG operation  
Night Vision Goggles emergency procedures  
Lookout doctrine  
Obstacle clearance/Hazards  
NS Aircraft considerations/configurations  
Monitoring procedures  
In-Flight support duties

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI and NSFI or NSI

Prerequisite. NFAM-1202

### 3.7.4 Formation (FORM)

Purpose. To introduce aircrew duties associated with formation flight.

General. Aircrew (CCUI) may fly these events in conjunction with the pilot syllabus. Instructors (CCI) shall be a NSI or NSFI for FORM-1501.

Crew Requirement. CCI/CCUI

<b>SFORM-1500</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S</b>	<b>MCAT</b>
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Goal. Introduce day formation flight while incorporating CRM.

#### Requirement

##### Discuss

Formation flight procedures  
Wingman responsibilities  
Standard Terminology  
Lost comm procedures  
Lead change procedures  
    Full Comm  
    No Comm  
Formation flight profiles  
    Combat Cruise  
    Combat Spread  
    Parade  
Aircraft lighting considerations

##### Introduce

Formation flight procedures  
Wingman responsibilities  
Standard Terminology

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. FAM-1106, LECT-0226

External Syllabus Support. Aircrew Procedures Trainer

<b>FORM-1501</b>	<b>2.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>2 CH-53K</b>
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Goal. Introduce day formation flight while incorporating CRM.

#### Requirement

##### Practice

Formation flight procedures  
Wingman responsibilities

Standard Terminology  
Lead change procedures  
Formation flight profiles

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew Procedures Trainer

Instructor. CCI

Prerequisite. SFORM-1500

**FORM-1502    2.0    \*    B    NS    A    2 CH-53K**

Goal. Introduce night formation flight while incorporating CRM.

Requirement

Practice

Formation flight procedures  
Wingman responsibilities  
Standard Terminology  
Lead change procedures  
Formation flight profiles  
Aircraft lighting considerations

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew Procedures Trainer

Instructor. CCI

Prerequisite. SFORM-1500

### 3.7.5 Confined Area Landings (CAL)

Purpose. To introduce aircrew duties associated with Confined Area Landings (CAL).

General. Aircrew (CCUI) may fly these events in conjunction with the CAL stage of the pilot syllabus. Instructors (CCI) shall be a NSI or NSFI for CAL-1603 and CAL-1604.

Crew Requirement. CCI/CCUI

**SCAL-1600    1.5    \*    B    D    S    MCAT**

Goal. Introduce Confined Area Landings (CALs) while incorporating CRM.

Requirement

Discuss

Loss of visual reference during landing  
Standard Terminology  
Waveoff Criteria  
Closure rates  
Distance estimation

Introduce

Loss of visual reference during landing  
Confined Area Landings (CALs)/takeoff procedures  
Landing considerations in an austere environment  
Section considerations

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew Procedures Trainer

Instructor. FRSI

Prerequisite. FAM-1106,

<b>CAL-1601</b>	<b>1.5</b>	<b>*</b>	<b>B, SC</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Practice Confined Area Landings (CALs) while incorporating CRM.

Requirement

Practice

- Standard Terminology
- Waveoff Criteria
- Closure rates
- Distance estimation
- Confined Area Landings (CALs)/takeoff procedures
- Landing considerations in an austere environment

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. SCAL-1600

<b>CAL-1602</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>2 CH-53K</b>
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Goal. Practice section Confined Area Landings (CALs) while incorporating CRM.

Requirement

Practice

- Standard terminology
- Section considerations
- Waveoff Criteria
- Closure rates
- Distance estimation
- Confined Area Landings (CALs)/takeoff procedures
- Formation landing considerations
- Landing considerations in an austere environment

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. SCAL-1600

<b>CAL-1603</b>	<b>1.5</b>	<b>*</b>	<b>B, SC</b>	<b>NS</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Practice Confined Area Landings (CALs) while incorporating CRM.

Requirement

Discuss

- Night systems considerations
- Closure rates
- Distance estimation
- Depth perception

Practice

- Standard Terminology
- Night systems considerations
- Waveoff Criteria
- Closure rates
- Distance estimation
- Landing considerations in an austere environment

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI, NSI or NSFI

Prerequisite. NFAM-1201 and CAL-1601

**CAL-1604      1.5      \*      B      NS      A      2 CH-53K**

Goal. Practice Night Systems (NS) Section Confined Area Landings (CALs) while incorporating CRM.

Requirement

Discuss

NS Section considerations

Practice

Standard terminology

NS Section considerations

Waveoff Criteria

Closure rates

Distance estimation

Formation landing considerations

Landing considerations in an austere environment

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI, NSI or NSFI

Prerequisite. CAL-1602

3.7.6 External Loads (EXT)

Purpose. To introduce aircrew duties associated with external cargo operations.

General. Aircrew (CCUI) may fly these events in conjunction with the external stage of the Pilot syllabus.

Instructors (CCI) shall be a NSI or NSFI for 1705 and 1706.

Crew Requirement. CCI/CCUI

**SEXT-1700      1.5      \*      B      D      S      MCAT**

Goal. Introduce Single-Point External Operations while incorporating CRM.

Requirement

Discuss

Standard Terminology

Preflight

Safety Procedures

Single Point Operational Procedures

Emergency procedures

Aircraft Configuration

Weight and balance considerations

Demonstrate

Perform maneuver calls using standard terminology

Single point operational procedures

Emergency release

Use of external cargo equipment

Practice

Perform maneuver calls using standard Terminology

Preflight

Safety procedures

Single point operational procedures

Emergency release

Use of external cargo equipment

Aircraft configuration

**Performance Standard.** Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew External Procedures Trainer

Instructor. CCI

Prerequisite, CAL-1601

<b>SEXT-1701</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S</b>	<b>MCAT</b>
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Goal. Introduce Dual-Point External Operations while incorporating CRM.

## Requirement

## Discuss

Standard Terminology  
Preflight  
Safety Procedures  
Dual Point Operational Procedures  
Emergency procedures  
Aircraft Configuration  
Weight and balance considerations

Demonstrate

- Perform maneuver calls using standard terminology
- Dual point operational procedures
- Emergency release
- Use of external cargo equipment

## Practice

- Perform maneuver calls using standard Terminology
- Preflight
- Safety procedures
- Dual point operational procedures
- Emergency release
- Use of external cargo equipment
- Aircraft configuration

**Performance Standard.** Per CH-53 NATOPS and FRS Maneuver Description Guide.

External Syllabus Support. Aircrew External Procedures Trainer

Instructor. CCI

**Prerequisite.** CAL-1601

<b>EXT-1702</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Practice Single-Point External Operations while incorporating CRM.

## Requirement

## Discuss

## External load safety inspection

## Practice

- Perform maneuver calls using standard Terminology
- Preflight
- Safety procedures
- Single point operational procedures
- Use of external cargo equipment
- Aircraft configuration
- Lookout doctrine
- HST considerations

**Performance Standard.** Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. SEXT-1700

**EXT-1703      1.5      \*      B,S      D      A      1 CH-53K**

Goal. Practice Dual-Point External Operations while incorporating CRM.

Requirement

Discuss

External load safety inspection

Practice

Perform maneuver calls using standard Terminology

Preflight

Safety procedures

Dual point operational procedures

Use of external cargo equipment

Aircraft configuration

Lookout doctrine

HST considerations

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. SEXT-1701

**EXT-1704      1.5      \*      B      NS      A      1 CH-53K**

Goal. Practice night systems (NS) Single-Point External Operations while incorporating CRM.

Requirement

Discuss

NS considerations

Closure rate

Distance estimation

Depth perception

Lighting considerations

Crows foot

Hook lights

Aircraft lighting

Practice

Perform maneuver calls using standard Terminology

Preflight

Safety procedures

Single point operational procedures

Use of external cargo equipment

Aircraft configuration

Lookout doctrine

HST considerations

NS considerations

Closure rate

Distance estimation

Depth perception

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI, NSI or NSFI

Prerequisite. EXT-1702

**EXT-1705      1.5      \*      B,S      NS      A      1 CH-53K**

Goal. Practice night systems (NS) Dual-Point External Operations while incorporating CRM.

Requirement

Discuss

NS considerations  
    Closure rate  
    Distance estimation  
    Depth perception  
Lighting considerations  
    Crows foot  
    Hook lights  
    Aircraft lighting

Practice

Perform maneuver calls using standard Terminology  
Preflight  
Safety procedures  
Dual point operational procedures  
Use of external cargo equipment  
Aircraft configuration  
Lookout doctrine  
HST considerations  
NS considerations  
    Closure rate  
    Distance estimation  
    Depth perception

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI, NSI or NSFI

Prerequisite. EXT-1703

**SEXT-1706      1.5      \*      B      D      S      MCAT**

Goal. Introduce Independent load external operations while incorporating CRM.

Requirement

Discuss

Standard Terminology  
Safety Procedures  
Independent load considerations  
Independent pickup and drop-off location considerations  
Emergency procedures  
Weight and balance considerations

Practice

Perform maneuver calls using standard Terminology  
Preflight  
Emergency release  
Safety procedures  
Independent load operational procedures  
Use of external cargo equipment

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. EXT 1703

External Syllabus Support. Aircrew External Procedures Trainer



### 3.7.7 Terrain Flight (TERF)

Purpose. To introduce aircrew duties associated with terrain flight.

General. Aircrew (CCUI) may fly these events in conjunction with the terrain flight stage of the pilot syllabus. Instructors (CCI) shall be a TERFI.

Crew Requirement. CCI/CCUI

**STERF-1800 1.5 \* B D S MCAT**

Goal. Practice Terrain Flight (TERF) while incorporating CRM.

#### Requirement

##### Discuss

Lookout doctrine  
Standard terminology  
Obstacle/terrain clearance  
TERF maneuvers

##### Practice

Perform maneuver calls using standard Terminology  
Terrain Flight (TERF) procedures

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. CAL-1601

**TERF-1801 1.5 \* B,S D A 1 CH-53K**

Goal. Practice Terrain Flight (TERF) while incorporating CRM.

#### Requirement

##### Discuss

Standard terminology

##### Practice

Perform maneuver calls using standard Terminology  
Terrain Flight (TERF) procedures  
TERF maneuvers  
Lookout doctrine

Performance Standard. Per CH-53 NATOPS and FRS Maneuver Description Guide.

Instructor. CCI

Prerequisite. CAL-1601

### 3.7.8 Core Skill Introduction Review (REV)

Purpose: To demonstrate proficiency in performing aircrew duties.

#### General

Aircrew (CCUI) shall complete a CH-53 NATOPS Flight Manual Open and Closed Book evaluation prior to performing this stage of flight.

Upon completion of this stage of flight, the aircrew will be NATOPS qualified as Crew Chief (CC) in appropriate T/M/S.

Qualified Crew Chief Fleet Replacement Squadron Instructor (FRSI) shall evaluate this stage of flight.

Crew Requirement. FRSI/CCUI

**SREV-1900 1.5 \* B (NS) A 1 CH-53K**

Goal. Review emergency procedures while incorporating Crew Resource Management (CRM).

Requirement

Discuss

Performing emergency procedures  
Emergency procedure safety

Practice

Standard NATOPS brief  
Engine emergency procedures  
Electrical system emergency procedures  
Transmission emergency procedures  
Fuel system emergency procedures  
Fire emergency procedures  
Emergency landing

Performance Standard. Demonstrate the ability to conduct an appropriate NATOPS flight brief and utilize CRM to ensure proper crew coordination. Demonstrate knowledge of Emergency Procedures and aircraft limitations IAW CH-53 NATOPS.

Instructor. CCI

Prerequisite. Completion of all applicable 1000 level flight events (TERF-1801 and below).

**REV-1901      2.0      \*      B,S      (NS)      A      1 CH-53**

Goal. Review emergency procedures while incorporating Crew Resource Management (CRM).

Requirement

Discuss

Performing emergency procedures  
Emergency procedure safety

Review

Standard NATOPS brief  
Engine emergency procedures  
Electrical system emergency procedures  
Transmission emergency procedures  
Fuel system emergency procedures  
Fire emergency procedures  
Emergency landing

Performance Standard. Demonstrate the ability to conduct an appropriate NATOPS flight brief and utilize CRM to ensure proper crew coordination. Demonstrate knowledge of Emergency Procedures and aircraft limitations IAW CH-53 NATOPS.

Instructor. CCI

Prerequisite. SREV-1900.

3.7.9 Core Skill Introduction Evaluation (CSIX)

**CSIX-1902      1.5      \*      B,S      (NS)      A      1 CH-53K**

Goal. Review Aircrew duties while incorporating Crew Resource Management (CRM).

Requirement

Discuss

Aircrew duties  
Performing emergency procedures  
Emergency procedure safety

Review

Aircrew duties  
Engine emergency procedures  
Electrical system emergency procedures

Fuel system emergency procedures  
Fire emergency procedures  
Emergency landing

Performance Standard. Demonstrate the ability to conduct an appropriate NATOPS flight brief and utilize CRM to ensure proper crew coordination and flight safety. Demonstrate knowledge of and execute multiple Emergency Procedures and aircraft limitations IAW CH-53 NATOPS.

Instructor. FRSI

Prerequisite. REV-1900

### 3.8 CORE PHASE (2000)

Purpose. To introduce and develop proficiency in the execution of Core Skills required as Crew Chief/Aerial Gunner/Observer within a Marine Heavy Helicopter Squadron (HMH). The Core Skill Phase represents the basic skill sets required to conduct Mission Skills (3000 Phase). These basic functions serve as tactical enablers that allow crews to progress to the more complex Mission Phase. This phase encompasses a combination of academic and flight events to train the individual aircrew to the level required to conduct assigned Mission Skills.

#### General

A Crew Chief (CC) will no longer be referred to as a Crew Chief Under Instruction (CCUI) upon graduation for HMHT-302 as the individual is a designated Naval Aircrewman per CNAF M-3710.7. For all 2000-5000 phase of training the crew requirement of "CC" shall refer to a designated Crew Chief who is eligible for that level event per the event prerequisites. This individual may fulfill either the "CC" or the "AG/O" portion of the crew requirement.

An Aerial Gunner/Observer Under Instruction (AG/OUI) is an individual that has been approved by a unit Commanding Officer to begin the AG/OUI syllabus per Chapter 4 of this manual, but has not yet completed the syllabus and has not yet been designated a Naval Aircrewman. This individual shall not be used to fulfill the crew requirement per the individual event.

An Aerial Gunner/Observer (AG/O) is an individual that has completed the prescribed AG/OUI syllabus per Chapter 4 of this manual, and has been designated a Naval Aircrewman by a unit Commanding Officer. This individual may be used to fulfill the "AG/O" portion of the crew requirement for any event for which they are eligible per the event prerequisites.

Aircrew is considered NSQ HLL (able to transport troops under HLL conditions) when the following 6 events have been completed: HLL-2120, HLL-2220, HLL-2221, HLL-2320, HLL-2321, and HLL-2920. Aircrew shall fly all NS events in the NSQ HLL syllabus under ambient light conditions of .0022 LUX or greater.

Aircrew is considered NSQ LLL (able to transport troops under LLL conditions) when the following events have been completed: LLL-2230, LLL-2231, LLL-2330, LLL-2331, and LLL-2930. Aircrew shall fly all NS events in the NSQ LLL syllabi under ambient light conditions of below .0022 LUX.

#### Ground/Academic Training

Purpose. Aircrew undergoing instruction in this phase must have completed the MAWTS-1 Course Catalog Academic Support Package lectures applicable to this phase of training.

Upon completion, the CC/AG/OUI/AG/O shall report to the designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3 (Aircrew Ground School Training) of the APR, using the Enlisted Aircrew Performance Record/Qualification Jacket Academic Tracker in Paragraph 3.17.2 of this document.

2000-5000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53K T&R:

<https://www.intranet.tecom.usmc.mil/sites/mawts1/default.aspx>

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53K T&R:

<http://www.mawts1.usmc.smil.mil/>

Prerequisites. The following events/designations are prerequisites for crew chiefs prior to the commencement of the Core Skill Phase. Aerial observers shall begin their training in the Core Skill Phase (2000).

Academic. See event/MAWTS-1 Course Catalog  
Flight. Designated Crew Chief/AG/OUI or AG/O

### Stage Overview

CORE PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
INTERNALS (INT)	3.9.1	3-50
FORMATION (FORM)	3.9.2	3-54
CONFINED AREA LANDINGS (CAL)	3.9.3	3-54
TERRAIN FLIGHT (TERF)	3.9.4	3-55
EXTERNALS (EXT)	3.9.5	3-57
GROUND THREAT REACTION (GTR)	3.9.6	3-62
AERIAL GUNNERY (AG)	3.9.7	3-65
TACTICS (TAC)	3.9.8	3-71
HIGH LIGHT LEVEL (HLL)	3.9.9	3-73
LOW LIGHT LEVEL (LLL)	3.9.10	3-78

### 3.9 CORE STAGES

#### 3.9.1 Internal Loads (INT)

Purpose. To introduce and refine aircrew duties in loading, securing, unloading passengers, cargo and vehicles.

Ground/Academic Training. All self-paced readings and lectures pertaining to this stage shall be completed prior to flight initiation. Utilize academic courseware as outlined in the MAWTS-1 Course Catalog.

**ACAD-2003 1.0 \* B G**

Goal. Completion of CH-53 Internal Cargo Operations academic requirements.

Requirement. Complete all required CH-53 Internal Cargo Operations training modules.

Performance Standard. Per current evaluation criteria for CH-53 Internal Cargo Operations.

**ACAD-2050 1.0 \* B G**

Goal. Completion of EA Tactical Aircrew Considerations and Responsibility (TACR) academic requirements.

Requirement. Complete all required EA Tactical Aircrew Considerations and Responsibility (TACR) Training modules.

Performance Standard. Per current evaluation criteria for EA Tactical Aircrew Considerations and Responsibility (TACR) Training

**INT-2100 1.5 \* B (N) G 1-STATIC CH-53K/SIM**

Goal. Introduce and practice aircrew duties when loading, unloading and securing internal cargo and/or vehicle.

#### Requirement

##### Introduce/Discuss

- CC vs. AG/O responsibilities during cargo operations
- CRM and crew coordination during cargo operations
- Aircraft danger zones
- Aircraft limitations
- Cabin configuration/security
- CG limitations and considerations
- Cargo loading, unloading, securing procedures
- Cargo winch operation w/ snatch blocks
- Various types of support equipment
- Forklift procedures
- J-Bar usage
- Palletized vs. Non-palletized cargo

Safety precautions transporting various cargo  
Deceased casualties  
Petroleum, oxygen, lubricants (POL)  
Liquid oxygen (LOX)  
Pyrotechnics  
Class V cargo (ammunition)  
Taxi drop procedures  
Scan pattern with cargo/vehicles  
Hand and arm signals  
Cargo on-load/off-load with RMWS installed  
Ramp/flipper position during on-load/off-load/taxi drop  
Terrain suitability for cargo/vehicle on-load/off-load  
NVG considerations  
Cabin/cargo lighting considerations  
Safety precautions during cargo operations  
Assault Support Requests  
Arrival/Departure Airfield Control Group Operations (A/DACG)

Performance Standards. Conduct various types of cargo and/or vehicle loading, securing, and unloading procedures IAW the cargo loading manual, NTTP 3-22.3-CH53, NATOPS, and any applicable NAVAIR white papers. Perform crew coordination along with all applicable hand and arm signals associated with vehicle loading and forklift procedures to direct simulated vehicle/forklift into the A/C. Discuss RMWS and ramp position considerations during cargo or vehicle on-load/off-load.

External Syllabus Support. Applicable cargo and/or vehicles, applicable support equipment, static CH-53 or approved load trainer.

Instructor. TERFI required for all personnel in the Basic (B). NSI required if conducted at night.

Prerequisite. ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night)

**INT-2101      1.5      \*      B      (N)      G      1 STATIC CH-53K/SIM**

Goal. Introduce and practice passenger briefing, embark, securing, and debark procedures.

Requirement

Introduce

CC vs. AG/O responsibilities during passenger embark/ debark  
CRM and crew coordination during passenger operations  
A/C danger zones  
Cabin configuration/security  
Litter considerations  
NFM-900 Passenger briefing guide  
Hand and arm signals  
Communication with passengers  
ICS station for AFC or serial leader  
Passenger embarking procedures  
Passenger securing procedures  
Passenger debarking procedures  
Passenger accountability  
Scan pattern with passengers  
Passenger embark/debark considerations with RMWS installed  
Ramp/flipper position during passenger embark/debark  
Terrain suitability for passenger embark/debark  
NVG considerations  
Cabin lighting considerations  
Passenger lighting considerations  
Passenger safety/weapons considerations  
Emergency passenger egress

Crew responsibilities for flight over water with PAX  
Abandon/ditching aircraft

Performance Standards. Conduct passenger briefing, embarking, securing, and debarking procedures IAW applicable NATOPS. Demonstrate keeping personnel clear of all A/C danger zones. Discuss RMWS and ramp position considerations during passenger embark/debark.

External Syllabus Support. Static CH-53 or approved load trainer.

Instructor. TERFI required for all personnel in the Basic (B) POI. NSI required if conducted at night.

Prerequisite. ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night)

**INT-2102      1.5      \*      B,S      (N)      G      1-STATIC CH-53K/SIM**

Goal. Introduce and practice aircrew duties while loading, unloading, and securing 463L pallets.

Requirement

Introduce/Discuss:

463L Pallet  
GSE required for 463L pallet  
Cabin configuration/security and use of locking rail mechanism  
MFD cargo CG Input  
CG limitations and considerations  
Certified vs. Non-Certified loads  
Tail to Tail Joint operations

Performance Standards. Conduct loading, securing, and unloading procedures of 463L pallets IAW the cargo loading manual, NTTP 3-22.3-CH53, NATOPS, and any applicable NAVAIR white papers. Perform crew coordination along with all applicable hand and arm signals associated forklift procedures to direct simulated forklift into the A/C. Discuss RMWS and ramp position considerations during 463L pallet on-load/off-load.

External Syllabus Support. Applicable cargo, applicable support equipment, 463L pallet, and static CH-53 or approved load trainer.

Instructor. TERFI required for all personnel in the Basic (B) and Series Conversion (S) POI. NSI required if conducted at night.

Prerequisite. ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night),

**INT-2105      1.5      365      B,R,M      (NS)      A      1 CH-53K**

Goal. Introduce and practice aircrew duties when loading, unloading and securing internal cargo and/or vehicles.

Requirement

Discuss/Practice:

CC vs. AG/O responsibilities during cargo operations  
CRM and crew coordination during cargo operations  
Cabin configuration/security  
Cargo loading, securing, unloading procedures  
Cargo winch operation w/snatch blocks (if applicable)  
Support equipment utilization (if applicable)  
Taxi drop procedures  
Vehicle loading, securing, and off-load procedures  
Scan pattern with cargo/vehicles  
Hand and arm signals  
Cargo on-load/off-load with RMWS installed  
Ramp/flipper position during on-load/off-load/taxi drop  
Safety precautions during cargo operations  
ICS procedures  
Assault Support Requests  
Arrival/Departure Airfield Control Group Operations (A/DACG)

Performance Standards. Conduct various types of cargo and/or vehicle loading, securing, and unloading procedures

IAW above listed items, cargo loading manual, NTTP 3-22.3-CH53, NATOPS, and any applicable NAVAIR white papers. Perform crew coordination along with applicable hand and arm signals associated with vehicle loading and forklift procedures. Discuss RMWS and ramp position considerations during cargo or vehicle on-load/off-load.

Crew Requirements. P/P/CC

Instructor. TERFI required for all personnel in the Basic (B), and Refresher (R) POI. NSI required if conducted at night

External Syllabus Support. Applicable cargo and/or vehicles

Prerequisite. ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night), INT-2100

**INT-2106      1.5      \*      B,R,M      (NS)      A      1 CH-53K**

Goal. Introduce and practice passenger briefing, embark, securing, and debark procedures.

Requirement

Discuss/Practice

CC vs. AG/O responsibilities during passenger embark/debark  
CRM and crew coordination during passenger operations  
Cabin configuration/security  
NFM-900 Passenger briefing guide  
Communication with passengers  
Passenger debarking, securing, debarking, accountability  
ICS procedures during embark/debark  
Ramp/flipper position during passenger embark/debark

Performance Standards. Conduct passenger briefing, embark, securing, and debark procedures IAW above listed items, cargo loading manual, NTTP 3-22.3-CH53, and CH-53 NATOPS. Practice keeping personnel clear of all A/C danger zones. Discuss RMWS and ramp/flipper position considerations during passenger embark/debark.

Crew Requirements. P/P/CC

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

Prerequisite. ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night), INT-2101

**INT-2107      1.5      \*      B,S      (NS)      G      1-STATIC CH-53K/SIM**

Goal. Introduce and practice aircrew duties while loading, unloading, and securing 463L pallets. 463L pallets with heavy loads optional but preferred.

Requirement

Discuss/Practice:

463L Pallet  
GSE required for 463L pallet  
Cabin configuration/security and use of locking rail mechanism  
MFD cargo CG Input  
CG limitations and considerations  
Certified vs. Non-Certified loads  
Tail to Tail Joint operations

Performance Standards. Conduct loading, securing, and unloading procedures of 463L pallets IAW the cargo loading manual, NTTP 3-22.3-CH53, NATOPS, and any applicable NAVAIR white papers. Perform crew coordination along with all applicable hand and arm signals to direct forklift into the A/C. Discuss RMWS and ramp position considerations during 463L pallet on-load/off-load.

External Syllabus Support. Applicable cargo, applicable support equipment, and 463L pallet.

Instructor. TERFI required for all personnel in the Basic (B) and Series Conversion (S) POI. NSI required if conducted at night.

Crew Requirements. P/P/CC

Prerequisite. ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night), INT-2102.

### 3.9.2 Formation (FORM)

Purpose: To introduce and practice aircrew responsibilities during formation flight and introduce responsibilities of tactical formation flight during the day.

Crew Requirement: P/P/CC/AG/O

Ground/Academic Training: All self-paced readings and lectures pertaining to this stage shall be completed prior to flight initiation. Utilize academic courseware as outlined in the MAWTS-1 Course Catalog.

**FORM-2110    1.5    180    B,R,M,S                    D    A    2 CH-53K**

Goal. Introduce and practice aircrew duties during basic formation flight and introduce tactical formation flight.

#### Requirement

##### Introduce/Discuss

- Basic tactical formations
- Wingman considerations
- Wingman updates using standard terminology
- “Visual” vs. “Blind”
- Inadvertent Instrument Meteorological Conditions (IIMC) “Popeye”
- Tactical formation maneuvering
- Tactical vs. Formation lead change

##### Practice

- CC vs. AG/O responsibilities during formation flight
- CRM and crew coordination during formation flight
- Standard terminology
- Identifying closure rate to wingman
- Cabin configuration/security

Performance Standards. Conduct aircrew duties and demonstrate proficient knowledge of aircrew considerations during tactical formation flight IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Instructor. TERFI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. ACAD-2050

### 3.9.3 Confined/Mountainous Area Landings (CAL/MAL)

Purpose. To introduce and practice aircrew responsibilities while conducting CAL/MAL operations with single ship and multiple aircraft during the day.

General. Aircrew may find a description of these maneuvers in the CH-53 NATOPS and NTTP 3-22.3-CH-53.

Crew Requirement. P/P/CC for CAL-2210, P/P/CC/AG/O for CAL-2211

Ground/Academic Training. The MAWTS-1 CH-53 Course Catalog contains all self-paced readings and lectures pertaining to this stage which shall be completed as outlined in the MAWTS-1 Course Catalog.

**CAL-2210    1.5    \*    B                    D    A/S    1 CH-53K/MCAT**

Goal. Introduce and practice CALs/MALs using tactical approaches.

#### Requirement

##### Introduce/Discuss:

- CALs / MALs
- Airspeed/altitude during landing approach
- Desert landing profile
- Effects of wind
- Tactical approaches
- A/C landing gear brake limitations
- Rotor-wash effects



Brown out/white out procedures/Reduced Visibility Landings (RVL)  
Aircraft lighting conditions

Practice

CC vs. AG/O responsibilities during CAL/MAL operations  
CRM and crew coordination during CAL/MAL operations  
Cabin configuration/Security  
Identifying closure rate to ground during landing  
Lookout doctrine  
Aircraft/Obstacle clearance  
Identifying terrain suitability  
Standard Terminology  
Drift correction/Heading control

Performance Standards. Conduct CAL/MAL operations IAW above listed items and the CH-53 NATOPS and NTTP 3-22.3-53. Perform a minimum of 5 confined area landings.

Range Requirements. See training resource requirements in Chapter 1 of this document.

External Syllabus Support. MCAT as required.

Instructor. TERFI required for all personnel in the Basic (B) POI.

Prerequisite. ACAD-2050

**CAL-2211      1.5      365      B,R,M,S      D      A      2 CH-53K**

Goal. Introduce and practice CALs/MALs using tactical approaches within a section.

Requirement

Introduce/ Discuss

Wingman situational awareness during section CALs  
Wingman terminology during section CALs  
Wingman update during section CALs  
Wingman crossover during section CALs  
Section takeoffs, approaches, landings to a CAL/MAL site

Practice

CC vs. AG/O responsibilities during section CAL/MAL operations  
CRM and crew coordination during section CAL/MAL operations  
Cabin configuration/security  
Tactical approaches  
Identifying closure rate to ground during landing  
Lookout doctrine  
Aircraft/Obstacle clearance  
Identifying terrain suitability  
Standard Terminology  
Drift correction/Heading control  
Wave off procedures

Performance Standards: Perform aircrew duties during tactical CAL/MAL operations within a section IAW the above listed items and IAW CH-53 NATOPS and NTTP 3-22.3-53. Perform a minimum of 5 confined area landings in lead position and 5 confined area landings in the wingman position.

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

Instructor: TERFI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite: FORM-2110, CAL-2210

3.9.4 Terrain Flight (TERF)

Purpose. To enhance aircrew responsibilities and lookout doctrine with TERF maneuvers/navigation and introduce section maneuvering in the day TERF environment.

General. Currency restrictions per T&R Program Manual. Crew Chiefs will be considered TERF qualified at the completion of TERF-2311. AG/OUI will complete the TERF syllabus prior to being designated an AG/O. The AG/OUI shall not be considered TERF qualified until after they have completed the NATOPS and CRM evaluation flight and have been designated an AG/O.

Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 chapter of the MAWTS-1 Course Catalog.

**ACAD-2051      1.0      \*      B      G**

Goal. Completion of EA Terrain Flight academic requirements.

Requirement. Complete all required EA Terrain Flight training modules.

Performance Standard. Per current evaluation criteria for EA Terrain Flight.

**TERF-2310      1.5      \*      B      D      A/S      1 CH-53K/MCAT**

Goal. Introduce and practice maneuvers, clearance, standard terminology, and aircrew responsibilities while flying in the TERF environment.

Requirement

Introduce/Discuss

- TERF profiles
- Cockpit Scan
- Aircraft limitations
- Operational power checks
- Navigational assistance
- Terrain Flight Considerations
- Terrain Flight Maneuvers
- Standard terminology
- Blade tip walk around
- Rules of Conduct (Program Manual)
- Terrain Flight Maneuvers
- Forward aggressive scanning

Practice

- CC vs. AG/O responsibilities
- CRM and crew coordination
- Cabin configuration/security
- Lookout doctrine
- Obstacle clearance
- Identifying closure rate to terrain

Performance Standards. Conduct aircrew duties and responsibilities during TERF/maneuvers and maintain aircraft clearance IAW above listed items, CH-53 NATOPS and NTTP 3-22.3-CH53.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. MCAT as required.

Instructor. TERFI required for all personnel in the Basic (B) POI.

Prerequisite. ACAD-2050, ACAD-2051

**TERF-2311      1.5      365      B,R,M,S      D      A      2 CH-53K**

Goal. Introduce and practice maneuvers, clearance and aircrew responsibilities for a section of aircraft in the TERF environment.

Requirement

Introduce/Discuss

Tactical section maneuvering within the TERF environment

Practice

TERF profiles  
Cockpit Scan during TERF  
Aircraft limitations  
Operational power checks  
Navigational assistance during TERF  
Terrain Flight Maneuvers  
Standard terminology  
Wingman Crossover considerations during TERF  
CC vs. AG/O responsibilities  
CRM and crew coordination  
Cabin configuration/security  
Lookout doctrine  
Obstacle clearance  
Identifying closure rate to terrain  
Forward aggressive scanning

Performance Standards. Conduct aircrew duties and responsibilities during TERF/maneuvers and maintain aircraft clearance IAW the NATOPS and NTP 3-22.3-CH53.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. TERFI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. FORM-2110 and TERF-2310

### 3.9.5 External Operations (EXT)

Purpose. To develop skills necessary to conduct external operations in confined areas. AG/Os shall make the calls from the external hatch while over the external load in order to receive attainment/proficiency for the initial event.

Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

#### **NOTE**

It is recommended that consideration should be given to adding a third crewmember in the cabin in order to maintain a full 360 degree lookout capability while conducting external operations

<b>SEXT-2400</b>	<b>2.0</b>	<b>485</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>S/A</b>	<b>1 MCATT/CH-53K</b>
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Goal. Introduce and practice external operations.

Requirement

Introduce /Discuss:

Single point cargo hook system  
Dual point cargo hook system  
Independent/Triple hook system  
Pre-flight/hook checks  
Cargo hook control panel/switches  
Aircrew portable pendant control  
Cargo hook emergency release methods  
Cabin configuration/inspection prior to 1<sup>st</sup> external lift  
Gunner's belt attachment location  
Operational Power Checks  
Brown out/white out procedures  
Movement in the cabin with external hatch open  
Multiservice Helicopter Sling Load Manual

- Weight limitation for external load (min & max)
- HST brief per NTTP 3-22.5
- Hand and arm signals
- Static discharge precautions
- Obstacle clearance on ingress/departure
- Blowing debris in zone
- Standard terminology
- Hook placement in relation to HST personnel
- Drift identification/correction over the external load
- Safe pick up/drop off vs. perfect pick up/drop off
- Hazards/damage of dragging of external load
- Sling considerations during external load drop off
- Wave off procedure before, during, & after hook is loaded
- Terrain suitability for external drop off
- ICS failure while in the single point external hatch
- Aircraft emergency with external load
- AG/O duties during Externals

Practice:

- CC vs. AG/O responsibilities
- CRM and crew coordination
- Cabin configuration/security

Performance Standards. Conduct simulated external operations as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items.

External syllabus support. Aircraft/Simulator

Instructor. TERFI required for all personnel in the Basic (B), Refresher (R) POI. NSI required if conducted in simulated night time environment.

Prerequisite. CSIX-1901

<b>EXT-2410</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce and practice single point external operations.

Requirement

Introduce /Discuss:

- Single point cargo hook system
- Pre-flight/hook checks
- Cargo hook control panel/switches
- Aircrew portable pendant control
- Cargo hook emergency release methods
- Cabin configuration/inspection prior to 1<sup>st</sup> external lift
- Gunner's belt attachment location
- Operational Power Checks
- Brown out/white out procedures
- Movement in the cabin with external hatch open
- Multiservice Helicopter Sling Load Manual
- Weight limitation for external load (min & max)
- HST brief per NTTP 3-22.5
- Hand and arm signals
- Static discharge precautions
- Obstacle clearance on ingress/departure
- Blowing debris in zone
- Standard terminology
- Hook placement in relation to HST personnel
- Drift identification/correction over the external load
- Safe pick up/drop off vs. perfect pick up/drop off

Hazards/damage of dragging of external load  
Sling considerations during external load drop off  
Wave off procedure before, during, & after hook is loaded  
Terrain suitability for external drop off  
ICS failure while in the single point external hatch  
Aircraft emergency with external load  
AG/O duties during Externals

Practice

CC vs. AG/O responsibilities  
CRM and crew coordination  
Cabin configuration/security  
Lookout doctrine

Performance Standards. Conduct single point external operations as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External syllabus support. HST, single point loads.

Instructor. TERFI required for all personnel in the Basic (B) POI.

Prerequisite. CAL-2210, SEXT-2400

**EXT-2411      1.5      365      B,R,M,S                      D      A      1 CH-53K**

Goal. Introduce and practice dual point external operations.

Requirement

Introduce/Discuss

Dual Point cargo hook system  
AG/O duties during Externals

Practice

Dual point cargo hook system  
Pre-flight/hook checks  
Aircrew portable pendant control  
Cabin configuration/inspection prior to 1<sup>st</sup> external lift  
Gunner's belt attachment location  
Brown out/white out procedures  
Movement in the cabin with external hatch open  
Multiservice Helicopter Sling Load Manual  
Weight limitation for external load (min & max)  
HST Considerations  
Static discharge precautions  
Obstacle clearance on ingress/departure  
Standard terminology  
Drift identification/correction over the external load  
Safe pick up/drop off vs. perfect pick up/drop off  
Sling considerations during external load drop off  
Wave off procedure before, during, & after hook is loaded  
Terrain suitability for external drop off  
Aircraft emergency with external load  
Standard external load vs. heavy lift load  
AG/O duties during Externals  
CC vs. AG/O responsibilities  
Cabin configuration/security  
Lookout doctrine

Performance Standards. Conduct dual point external operations as outlined in the NATOPS and NTTP 3-22.3-

CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External syllabus support. HST, dual point load.Instructor: TERFI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Instructor. TERFI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. CAL-2210

**EXT-2420      1.5      \*      B      HLL      A      1 CH-53K**

Goal. Introduce and practice single point external operations utilizing Night Systems in HLL conditions.

Requirement

Introduce

- HLL NS considerations as applicable to Single Point external operations
- Aircraft lighting considerations
- Crows foot/NATO Y setup/usage
- Use of chemical lights

Discuss/Practice:

- Single point cargo hook system
- Pre-flight/hook checks
- Aircrew portable pendant control
- Cabin configuration/inspection prior to 1<sup>st</sup> external lift
- Gunner's belt attachment location
- Brown out/white out procedures
- Movement in the cabin with external hatch open
- Multiservice Helicopter Sling Load Manual
- Weight limitation for external load (min & max)
- HST Considerations
- Static discharge precautions
- Obstacle clearance on ingress/departure
- Standard terminology
- Drift identification/correction over the external load
- Safe pick up/drop off vs. perfect pick up/drop off
- Sling considerations during external load drop off
- Wave off procedure before, during, & after hook is loaded
- Terrain suitability for external drop off
- Aircraft emergency with external load
- Standard external load vs. heavy lift load
- AG/O duties during Externals
- CC vs. AG/O responsibilities
- Cabin configuration/security
- Lookout doctrine

Performance Standards. Conduct single point external operations while utilizing Night Systems in HLL conditions as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. HST, single point load.

Instructor. NSI required for all personnel in the Basic (B) POI.

Prerequisite. CAL-2220 and EXT-2410

**EXT-2421      1.5      180      B,R,M      HLL      A      1 CH-53K**

Goal. Introduce and practice dual point external operations using NS in HLL conditions.

Requirement

Introduce/Discuss

HLL NS considerations as applicable to dual point external operations  
Field of View (FOV) vs. Field of Regard (FOR)  
Scan pattern/Sight fixation  
Crows foot/NATO Y setup/usage  
Use of chemical lights

Practice

CC vs. AG/O responsibilities during HLL D/P EXT operations  
CRM and crew coordination during HLL D/P EXT operations  
Aircrew portable pendant control  
Pre-flight/hook checks  
Cabin configuration/inspection prior to 1<sup>st</sup> external lift  
Gunner's belt attachment location  
Operational Power Checks  
Brown out/white out procedures  
Movement in the cabin with external hatch open  
Multiservice Helicopter Sling Load Manual  
Weight limitation for external load (min & max)  
HST considerations  
Hand and arm signals  
Static discharge precautions  
Obstacle clearance on ingress/departure  
Standard terminology  
Drift identification/correction over the external load  
Safe pick up/drop off vs. perfect pick up/drop off  
Sling considerations during external load drop off  
Wave off procedure before, during, & after hook is loaded  
Terrain suitability for external drop off  
ICS failure while in the external hatch  
Aircraft emergency with external load  
Standard external load vs. heavy lift load  
AG/O duties during External  
Cabin configuration/security  
Lookout doctrine

Performance Standards. Conduct dual point external operations while utilizing Night Systems in HLL conditions as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. HST, dual point load

Instructor. NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. CAL-2220 and EXT-2411

**EXT-2430      1.5      180      B,R,M,S      LLL      A      1 CH-53K**

Goal. Introduce and practice external operations in LLL conditions, dual point preferred.

Requirement

Introduce /Discuss:

LLL NS considerations as applicable to external operations:  
Visual Acuity  
Depth perception vs. Distance estimation

Optical Flow  
Closure rate  
Scintillation

Practice

CC vs. AG/O responsibilities during LLL EXT operations  
CRM and crew coordination during LLL EXT operations  
Aircrew portable pendant control  
Pre-flight/hook checks  
Cabin configuration/inspection prior to 1<sup>st</sup> external lift  
Gunner's belt attachment location  
Operational Power Checks  
Brown out/white out procedures  
Movement in the cabin with external hatch open  
Multiservice Helicopter Sling Load Manual  
Weight limitation for external load (min & max)  
HST considerations  
Hand and arm signals  
Static discharge precautions  
Obstacle clearance on ingress/departure  
Standard terminology  
Drift identification/correction over the external load  
Safe pick up/drop off vs. perfect pick up/drop off  
Sling considerations during external load drop off  
Wave off procedure before, during, & after hook is loaded  
Terrain suitability for external drop off  
ICS failure while in the external hatch  
Aircraft emergency with external load  
Standard external load vs. heavy lift load  
AG/O duties during External

Performance Standards. Conduct external operations while utilizing Night Systems during LLL conditions as outlined in the NATOPS and NTP 3-22.3-CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. HST, certified load

Instructor. NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. CAL-2230, EXT-2420, EXT-2421, NSQ-HLL

### 3.9.6 Ground Threat Reaction (GTR) and Radar Ground Threat Reaction (GTR)

Purpose. To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics, and on board weapon systems to evade non-radar and radar surface-to-air threats.

General. Aircrew shall conduct this stage against appropriate ground-based radar or non-radar threats. Utilizing a range of threat simulation systems (e.g., Smokey SAMs, target lights, handheld pyrotechnics, AAR-47 stimulator) and detailed coordination with radar operators and ground crews will greatly enhance aircrew training.

Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites

Academic: See event  
Flight: TERF-2311  
Designation: CC/AG/O  
Qualification: TERFQ, AGQ



**ACAD-2580      1.0      \*      B      G**

Goal. Completion of APR-39 academic requirements.

Requirement. Complete all APR-39 training modules.

Performance Standard. Per current evaluation criteria for APR-39 training.

**ACAD-2581      1.0      \*      B      G**

Goal. Completion of CH-53K AAR/ALE-47 academic requirements.

Requirement. Complete all CH-53K AAR/ALE-47 training modules.

Performance Standard. Per current evaluation criteria for CH-53K AAR/ALE-47 training.

**ACAD-2582      1.0      \*      B      G**

Goal. Completion of CH-53K AAQ-24 academic requirements.

Requirement. Complete all CH-53K AAQ-24 training modules.

Performance Standard. Per current evaluation criteria for CH-53K AAQ-24 training.

**ACAD-4050      1.0      \*      B      G**

Goal. Completion of Basic Principals of EW academic requirements.

Requirement. Complete all Basic Principals of EW training modules.

Performance Standard. Per current evaluation criteria for Basic Principals of EW training.

**ACAD-4051      1.0      \*      B      G**

Goal. Completion of DM/GTR 1 academic requirements.

Requirement. Complete all DM/GTR 1 training modules.

Performance Standard. Per current evaluation criteria for DM/GTR 1 training.

**GTR-2540      1.5      365      B,R,M      (NS)      A/S      2 CH-53K/MCAT**

Goal. Introduce and practice non-radar ground based threat reactions and ASE familiarization.

Requirement

Introduce/Discuss:

Types of Non-Radar ground threat (Small arms, HMG, RPG, and MANPADS)  
Operation of AAR-47, ALE-47, and AAQ-24  
IR countermeasures  
GTR Training (IAW NTTP Appendix B)  
Five axioms of survival  
Inter and intra-aircraft communications  
Weapons handling  
Section tactical maneuvers to counter ground-based threat  
High, medium, and low altitude tactics  
Low altitude emergencies  
ASE employment to counter threat  
Standard Terminology

Practice

CC vs. AG/O responsibilities during Non-Radar ground threat reaction  
CRM and crew coordination during CC vs. AG/O responsibilities during  
Cabin configuration  
Section tactical maneuvers to counter ground-based threat

Performance Standards. Conduct helicopter section tactics against a low altitude surface-to-air non-radar threat IAW the NTTP 3-22.3-53 Appendix B Ground Threat Reaction Training. Utilize appropriate ASE and on board weapons in relation to the threat. Utilize standard terminology while giving the attack warning against various non-radar ground-based threats and during intra-aircraft communications. Execution of at least 1 line number should be accomplished using high or medium altitude tactics.

Ordnance. 60 flares and 2 .50 Caliber machine guns

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ground-based non-radar threat simulators (e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, target lights). MCAT as required for Maintain and Refresher POI only.

Instructor. WTI or DMI required for all personnel in the Basic (B) and Refresher (R) POI. A WTI or DMI that is also an NSI is required if conducted at night for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. ACAD-2581, ACAD-2582, ACAD-4051, ACAD-4052 TERFQ. HLL-2321~NS, LLL-2331~LLL.

**GTR-2541      1.5      365      B,R,M      (NS)      A      2 CH-53K**

Goal: Conduct ground based RADAR threat reactions, TTP validation, and ASE familiarization.

Requirement

Introduce/Discuss/Practice:

- CC vs. AG/O responsibilities during RADAR GTR
- CRM and crew coordination during RADAR GTR
- Cabin configuration
- Various threat signatures
- Evasive maneuvers coordinated with dispensing of chaff
- Section threat avoidance
- Terrain masking and use of chaff and flares
- Operation of APR-39 and ALE-47
- GTR training syllabus 3-22.3-CH53 Appendix B
- GTR Walk through
- Five axioms of survival
- Rules of engagement
- Inter and intra-aircraft communications
- Standard terminology
- Section tactics and maneuvers to counter radar threat
- High, medium, and low altitude tactics
- Low altitude emergencies
- Use of radar horizon, ground clutter, radar resolution cells, and radar masking techniques

Performance Standards. Conduct helicopter section tactics against a surface-to-air radar threat IAW the NTTP 3-22.3-53 Appendix B Ground Threat Reaction Training. Explain/Demonstrate utilization of the appropriate ASE and on board weapons in relation to the threat. Demonstrate attack warning against various surface-to-air radar threats. Utilize standard terminology in intra-plane communications. Execution of at least 1 line number should be accomplished using high or medium altitude tactics.

Ordnance. 30 chaff, 30 flares and 2 .50 Caliber machine guns

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ground emitter

Instructor. WTI or DMI required for all personnel in the Basic (B) and Refresher (R) POI. A WTI or DMI that is also an NSI required for all personnel in the Basic (B) or Refresher (R) POI if conducted at night.

Prerequisite. ACAD-2581, ACAD-2580, ACAD-2582, ACAD-4051, ACAD-4052 TERFQ. TERF-2321~HLL, TERF-2331~LLL, TERF-2311

### 3.9.7 Aerial Gunnery (AG)

Purpose. To demonstrate proficiency in delivering fire on targets of opportunity using the GAU-21 Medium Window Pintle Connection (MWPC) .50 caliber machine gun.

#### General

Aircrew shall be TERF qualified prior to beginning GAU-21 aerial gunnery stage of training. The exception to this is; an AG/OUI may enter this stage of training in order to fulfill their training requirements. They will have completed their TERF events but will not be officially “TERF Qualified” until all paper work is routed to the Commanding Officer for signature (TERF/AG qualification letters and NATOPS). See Chapter 4 of this document for AG/O training requirements.

All aircrew employing weapons shall have the current A1-H53BE-NFM-900 with all of the interim changes incorporated, on their person.

AG-2843 certifies the aircrew as an aerial gunner with the GAU-21 MWPC. Aircrew may be qualified as an aerial gunner on the GAU-21 MWPC at the discretion of the Commanding Officer after completing AG-2843. If the commanding officer chooses to qualify aircrew as an aerial gunner a qualification letter signed by the commanding officer shall be issued and placed in both the individuals NATOPS & APR jacket.

Aircrew may conduct night systems aerial gunnery events during either HLL or LLL conditions. If events are conducted during LLL conditions aircrew shall be NSQ HLL prior to conducting events.

An AGI on the GAU-21 MWPC is required for all day aerial gunnery flight events until aircrew are Aerial Gunnery Qualified.

An AGI on the GAU-21 MWPC who is also a NSI is required for all Night Systems (NS) aerial gunnery flight events until aircrew are Aerial Gunnery Qualified.

Aircrew do not lose their aerial gunnery “Qualification” status due to loss of proficiency (re-fly interval) in an individual event. Aircrew must re-fly that individual event with another qualified aircrew member in order to regain proficiency in that event.

Aircrew who lose proficiency inflight events (AG 2813 and AG-2843) automatically lose their “Qualification” status and must complete the Refresher (R) POI with the appropriately designated instructors.

A designated AGI on the GAU-21 MWPC shall only act in the capacity of an AGI when “Qualified” and proficient in aerial gunnery.

Approved laser aiming devices are required and “**SHALL**” be utilized during all night systems (NS) aerial gunnery flight events.

Aerial Gunnery Qualified Crew Chiefs and Aerial Observers/Gunners on the CH-53E that are undergoing Series Conversion (S) training may be assigned to the Series Conversion (S) POI if they are designated AGQ in the CH-53E.

#### Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings, lectures, and ground training events (STATIC/SIMULATED etc...) shall either be conducted or supervised by an AGI on the GAU-21 MWPC and shall be completed prior to beginning flight events. Self-paced readings and lectures are outlined in the MAWTS-1 CH-53 Course Catalog.

**ACAD-2053      1.0      \*      B      G**

Goal. Completion of EA Fundamentals of AG academic requirements.

Requirement. Complete all EA Fundamentals of AG training modules.

Performance Standard. Per current evaluation criteria for EA Fundamentals of AG training.

**ACAD-2055      1.0      \*      B      G**

Goal. Completion of EA GAU-21 academic requirements.

Requirement. Complete all EA GAU-21 training modules.

Performance Standard. Per current evaluation criteria for EA GAU-21 training.

**ACAD-2056      1.0      \*      B      G**

Goal. Completion of Laser Aiming Devices academic requirements.

Requirement. Complete all Laser Aiming Devices training modules.

Performance Standard. Per current evaluation criteria for Laser Aiming Devices training.

**AG-2800      3.0      \*      B      D      G      1 GAU-21**

Goal. Introduce and practice GAU-21 .50 caliber machine gun field stripping, cleaning, lubrication, and principles of operation IAW NAVAIR 11-95GAU21-1.

Requirement

Discuss

NAVAIR 11-95GAU21-1  
NA 11-600-GAU21-1  
NA 11-600-GAU21-2  
A1-H53BE-NFM-900 Pre-Fire procedure  
Conventional Ordnance Deficiency Report (CODR)

Introduce

Field stripping  
Cleaning and inspection  
Cleaning tools for the bore, chamber, and firing pin hole  
Nomenclature  
Principles of operation  
Changing feed direction  
Lubrication criteria and application  
Re-assembly

Performance Standards. Conduct field stripping, cleaning, inspection, lubrication, and re-assembly of the weapon ensuring correct feed orientation IAW all applicable manuals.

Ordnance Requirements. 1 GAU-21 .50 caliber machine gun per student

Instructor. AGI on the GAU-21 MWPC required for all personnel in the Basic (B) POI.

Prerequisites. ACAD-2055

**AG-2801      2.0      \*      B,S      D      G      1 STATIC CH-53K**

Goal. Introduce and practice pre-flight inspection, installation, removal, and in-flight removal and re-installation procedures for the GAU-21 MWPC and IZLID-200P LASER IAW A1-H53BE-NFM-900.

Requirement

Discuss:

NAVAIR 11-53DA-2  
A1-H53BE-NFM-900  
NA 11-95IZLID-1  
Conventional Ordnance Deficiency Report (CODR)

Introduce

Installation IAW A1-H53BE-NFM-900  
LASER installation IAW NA 11-95IZLID-1  
Pre-flight IAW A1-H53BE-NFM-900  
In-flight removal and re-installation

Performance Standards. Conduct pre-flight inspection, installation, removal, and in-flight removal and re-installation procedures for the GAU-21 MWPC and IZLID-200P LASER IAW A1-H53BE-NFM-900.

Ordnance Requirements. 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC, 2 IZLID-200P

Instructor. AGI on the GAU-21 MWPC required for all personnel in the Basic (B) and Series Conversion (S) POI.

Prerequisites. ACAD-2056, ACAD-2057, AG-2800

**AG-2802      2.0      \*      B      D      G      1 STATIC CH-53K/MCAT**

Goal. Introduce and practice normal firing operations, voice commands, weapons emergencies, troubleshooting techniques, egress considerations IAW A1-H53BE-NFM-900.

Requirements

Introduce/Discuss

A1-H53BE-NFM-900  
Local hung ordnance procedures (SOP per STA/MAG/UNIT)  
Egress considerations  
Conventional Ordnance Deficiency Report (CODR)  
Perform headspace and timing adjustments  
GAU-21 function check  
Ammunition inspection/preparation  
Ammunition uploading  
Principles of operation with dummy rounds  
Pre-takeoff (post-arming)  
Weapon status during in-flight voice commands  
Hand signals  
Lock and Load procedure  
Open fire procedure  
Cease fire procedure  
Clear and safe procedure  
Reload procedure  
Final landing procedure  
Post-flight inspection  
Weapon stoppage procedure  
Gun jam clearing procedure  
Runaway gun procedure  
Firing limitations  
Troubleshooting techniques

Practice

Installation IAW A1-H53BE-NFM-900  
LASER installation IAW NA 11-95IZLID-1  
Pre-flight IAW A1-H53BE-NFM-900  
Simulated In-flight removal and re-installation

Performance Standards. Conduct weapon adjustments, normal firing operations, weapons emergencies, and troubleshooting procedures IAW A1-H53BE-NFM-900. Explain voice commands and egress considerations.

Ordnance Requirements. 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand MWPC, 1 right hand MWPC, 2 IZLID-200P and 10 dummy rounds.

External Syllabus Support. MCAT as required.

Instructor. AGI on the GAU-21 MWPC required for all personnel in the Basic (B) POI.

Prerequisites. AG-2801

**AG-2812      1.5      \*      B      D      A      1 CH-53K**

Goal. Introduce and practice day aerial gunnery training with the GAU-21 MWPC during single ship operations.

Requirement

Introduce/ Discuss

Fire control voice commands  
Non-verbal fire control signals  
Weapon capabilities  
Fields of fire versus sectors of fire

- Aiming techniques
- Ballistic considerations
- Normal firing operations
- Fire discipline
- Firing Limitations
- Weapon emergency procedures
- Troubleshooting techniques
- Egress considerations with weapons installed
- All flight procedures IAW A1-H53BE-NFM-900
- Positive control of weapon
- Muzzle awareness
- Suggested Line numbers in the NTTP series

Practice

- CC vs. AG/O responsibilities during aerial gunnery
- CRM and crew coordination during aerial gunnery
- Cabin configuration/security
- Use and application of A1-H53BE-NFM-900 weapons checklist
- Pre-fire of GAU-21 machine gun
- Pre-flight of MWPC
- Standard Terminology

Performance Standards. Conduct aerial gunnery techniques while employing the GAU-21 MWPC IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets during single ship aircraft operations. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting the target area by second burst.

Ordnance. 600 rounds per aerial gunner, 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI on the GAU-21 MWPC required for all personnel in the Basic (B) POI.

Prerequisites. ACAD-2053, TERF-2310, AG-2802

**AG-2813      1.5      365      B,R,M,S      D      A      2+ CH-53K**

Goal. Introduce and practice day aerial gunnery with the GAU-21 MWPC during multi-ship operations.

Requirement

Introduce/Discuss

- Wingman no fire areas (NFA)
- Limited sectors of fire
- Fire discipline within a section
- Target hand-off

Practice

- CC vs. AG/O responsibilities during section aerial gunnery
- CRM and crew coordination during section aerial gunnery
- Pre-fire of GAU-21 machine gun
- Pre-flight of MWPC
- Cabin configuration /security
- Use and application of A1-H53BE-NFM-900
- Standard Terminology
- Normal firing operations
- Fire control voice commands
- Non-verbal fire control signals

Fields of fire versus sectors of fire  
Aiming techniques  
Ballistic considerations  
Firing Limitations  
All flight procedures IAW A1-H53BE-NFM-900  
Positive control of weapon  
Suggested Line numbers in the NTTP series

Performance Standards. Conduct aerial gunnery techniques while employing the GAU-21 MWPC during multi-ship operations IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets during multi-ship operations from both the lead and wingman positions. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting the target area by second burst.

Ordinance. 600 rounds per aerial gunner, 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI on the GAU-21 MWPC required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisites. TERF-2311, AG-2812

**AG-2842      1.5      \*      B      NS      A      1 CH-53K**

Goal. Introduce and practice aerial gunnery with the GAU-21 MWPC while utilizing Night Systems during single ship operations.

Requirement

Introduce/ Discuss

Aiming techniques on NS  
LASER safety/employment  
Nominal Ocular Hazard Distance (NOHD)  
NVG considerations (specifically tracer burnout and muzzle flash)

Practice

CC vs. AG/O responsibilities during NS aerial gunnery  
CRM and crew coordination during NS aerial gunnery  
Pre-fire of GAU-21 machine gun  
Pre-flight of MWPC  
Cabin configuration/ security  
Use and application of A1-H53BE-NFM-900  
Standard Terminology  
Normal firing operations  
Fire control voice commands  
Non-verbal fire control signals  
Ballistic considerations  
All flight procedures IAW A1-H53BE-NFM-900  
Positive control of weapon  
Suggested Line numbers in the NTTP series

Performance Standards. Conduct aerial gunnery techniques while employing the GAU-21 MWPC while utilizing night systems during single ship operations IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets during single ship aircraft operations or while in the lead position during multi ship aircraft operations. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting the target area by

second burst.

Ordnance. 600 rounds per aerial gunner, 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC, 2 IZLID-200P

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI on the GAU-21 MWPC who is also a NSI required for all personnel in the Basic (B) POI.

Prerequisite. TERF-2320 if HLL, TERF-2330 if LLL, AG-2812

**AG-2843      1.5      180      B,R,M,S      NS      A      2+ CH-53K**

Goal. Introduce and practice aerial gunnery with the GAU-21 MWPC while utilizing Night Systems during multi-ship operations.

Requirement

Introduce/Discuss:

Target identification utilizing LASER aiming devices  
Target hand-off utilizing LASER aiming devices

Practice

CC vs. AG/O responsibilities during NS section aerial gunnery  
CRM and crew coordination during NS section aerial gunnery  
Pre-fire of GAU-21 machine gun  
Pre-flight of MWPC  
Cabin configuration  
Use and application of A1-H53BE-NFM-900  
Standard Terminology  
Normal firing operations  
Wingman no fire areas (NFA)  
Fire discipline within a section  
Target hand-off  
NVG considerations (specifically tracer burnout and muzzle flash)  
LASER safety/employment  
Fire control voice commands  
Non-verbal fire control signals  
Fields of fire versus sectors of fire  
Aiming techniques  
Ballistic considerations  
All flight procedures IAW A1-H53BE-NFM-900  
Positive control of weapon  
Suggested Line numbers in the NTTP series

Performance Standards. Conduct aerial gunnery techniques while employing the GAU-21 MWPC while utilizing night systems during multi-ship operations IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, LASER employment, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets during multi-ship aircraft operations from both the lead and wingman positions. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting the target area by second burst.

Ordnance. 600 rounds per aerial gunner, 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC, 2 IZLID-200P

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI on the GAU-21 MWPC who is also a NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. TERF-2321~HLL, TERF-2331~LLL, AG-2813, AG-2842



### 3.9.8 Tactics (TAC)

Purpose. To introduce aircrew responsibilities for tactical missions.

Crew Requirement. P/P/CC/AG/O. If rounds are utilized and aircrews are not AGQ an AGI is required.

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 chapter of the MAWTS-1 Course Catalog.

**ACAD-2058      1.0      \*      B      G**

Goal. Completion of EA Basic Principals of Escort Operations academic requirements.

Requirement. Complete all required EA Basic Principals of Escort Operations Training modules.

Performance Standard. Per current evaluation criteria for EA Basic Principals of Escort Operations Training.

**TAC-2910      2.0      \*      B      D      A      2 CH-53K**

Goal. Introduce and practice aircrew responsibilities during a low threat section tactical operation.

#### Requirement

##### Introduce/Discuss

METT-TC  
Low threat environment criteria  
Flight leadership and Roles  
TACP, TAD, COMMS  
Serial leader  
Pick up Zone (PZ)/Marshaling Area Control Officer (MACO)  
Mission planning products  
Go criteria/No-go criteria  
Abort  
Bump Plan/Late-join/straggle plan  
Rules of engagement  
FENCE procedures  
Test fire area (TFA)  
Threat anticipation  
Objective area considerations  
“Cherry vs. Ice” criteria  
Sectors of fire/Field of Fire  
No Fire Areas (NFA)  
Wave-off effects during insert  
Contingencies  
Hostile area (Threat Environment)  
Battle Damage Assessment (BDA)  
Passengers and Cargo (if applicable)  
External operations (if applicable)  
Downed aircraft immediate actions  
Downed aircrew’s wingman responsibilities

##### Practice

CC vs. AG/O responsibilities during tactical operations  
CRM and crew coordination during tactical operations  
Mission analysis and Execution Checklist Usage  
Cabin configuration  
Lookout doctrine  
Weapons control procedures  
Navigational assistance  
Tactical formation maneuvering

Performance Standards. Conduct tactical operations in a low threat environment as stated in NTP 3-22.3-53.

Demonstrate knowledge/usage of mission planning products. If rounds are utilized refer to AG-codes for weapons performance standards.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ordnance request for weapons

Instructor. TERFI required for all personnel in the Basic (B) POI. WTI's should be utilized to the max extent possible.

Prerequisite. ACAD-2058, CAL-2211 and TERFQ

Ordnance. 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC installed. Rounds and firing of machine guns are optional though highly encouraged.

**TAC-2911      2.0      365      B,R,M      D      A      2 CH-53K**

Goal: Introduce and practice aircrew responsibilities during day medium threat tactical operations with multiple aircraft.

Requirement

Introduce/Discuss

- Low to Medium threat environment criteria
- Escort No Fire Area's (NFA's) in the objective area
- Escort Battle Positions
- Escort flight techniques
- Escort Flight Lead (EFL)
- Forward Air Controller (FAC)
- Forward Air Controller Airborne (FAC(A))
- Joint Tactical Air Controller (JTAC)
- Air Mission Commander (AMC)
- Fire support Coordinator (FSC)
- Control of Fires

Practice

- CC vs. AG/O responsibilities during tactical operations
- CRM and crew coordination during tactical operations
- METT-TC
- Pick up Zone (PZ)/Marshaling Area Control Officer (MACO)
- Use of Mission planning products
- Go criteria/No-go criteria and Mission Abort Criteria
- Bump Plan/Late-join/straggle plan
- Rules of engagement
- FENCE procedures
- Test fire area (TFA)
- Threat anticipation
- ASE utilization
- Weapons control procedures
- Tactical formation maneuvering
- Objective area considerations
- "Cherry" vs. "Ice" criteria
- Sectors of fire
- No Fire Areas (NFA)
- Wave-off effects
- Contingencies
- Hostile area
- Passenger embark/debark (if applicable)
- Cargo and vehicle on-load/securing/off-load (if applicable)
- External operations (if applicable)

Performance Standard. Conduct tactical operations in low to medium threat environment as stated in NTTP 3-22.3-

53. Demonstrate knowledge/usage of mission planning products. If rounds are utilized refer to AG-codes for weapons performance standards.

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. WTI's should be utilized to the max extent possible.

Prerequisites. TAC-2910

Ordinance. 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC installed. Rounds and firing of machine guns are optional though highly encouraged.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ordnance request for weapons. Range/Ordinance/Escort request if utilized.

### 3.9.9 NS High Light Level (HLL)

Purpose. To develop skill in the use of NS under light levels greater than or equal to .0022 lux (HLL) as predicted by the Solar Lunar Almanac Prediction (SLAP) and to qualify aircrew in NS HLL operations.

#### General

Night systems lectures and initial instructional flights and refresher flights shall be conducted by a WTI or NSI.

Aircrew not NSQ HLL requires supervision of an NSI for all events flown with NS.

The aircrew under instruction is considered NSQ HLL (able to transport troops under HLL conditions) when the following 6 events have been completed: HLL-2120, HLL-2220, HLL-2221, HLL-2320, HLL-2321, and HLL-2920. Aircrew shall fly all NS events in the NSQ HLL syllabus under ambient light conditions of .0022 LUX or greater.

Successful completion of HLL-2920 constitutes Night Systems Qualified (NSQ) HLL. A qualification letter signed by the commanding officer is required stating the aircrew is NSQ HLL to carry troops under HLL conditions. The original shall be placed in the aircrew's NATOPS jacket and a copy in the APR with a corresponding logbook entry.

Crew requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the High Light Level stage.

Academic. ACAD-2052

Flight. CAL-2211, TERFQ

**ACAD-2052      1.0      \*      B      G**

Goal. Completion of EA Night Vision Training academic requirements.

Requirement. Complete all required EA Night Vision Training modules.

Performance Standard. Per current evaluation criteria for EA Night Vision Training.

**HLL-2120      1.5      365      B,R,M      HLL      A      2 CH-53K**

Goal. Introduce and practice aircrew duties during basic NS formation flight and introduce NS tactical formation flight.

#### Requirement

##### Introduce/Discuss

Aircraft lighting conditions (overt/covert/formation)  
Scan pattern utilizing NVG  
Depth perception/Distance Estimation  
Closure rate  
Identifying closure rate utilizing NVG  
Lead change utilizing NVG

Tactical formation maneuvers while utilizing NVG

Practice

CC vs. AG/O responsibilities during HLL FORM  
CRM and crew coordination during HLL FORM  
Cabin configuration/Security  
Basic tactical formations utilizing night systems  
Inadvertent Instrument Meteorological Conditions (IIMC)  
Standard terminology  
Wingman Considerations

Performance Standards. Conduct aircrew duties and demonstrate proficient knowledge of aircrew considerations during tactical formation flight utilizing NS IAW NATOPS and NTTP 3-22.3-CH53.

Instructor. NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. ACAD-2052, FORM-2110

**HLL-2220      1.5      \*      B      HLL      A      1 CH-53K**

Goal. Introduce and practice single ship CALs/MALs operations using NS under HLL conditions.

Requirement

Introduce/Discuss

CALs while utilizing NS in HLL  
NVG considerations/failures  
Field of View vs. Field of Regard  
Identifying closure rate while utilizing NVGs  
Effects of terrain shadows during CALs  
Brown out/white out procedures while utilizing NVGs

Practice

CC vs. AG/O responsibilities during HLL CALs  
CRM and crew coordination during HLL CALs  
Cabin configuration/Security  
Aircraft lighting conditions (overt/covert/formation)  
Lookout doctrine  
Aircraft/Obstacle clearance  
Identifying terrain suitability  
Standard Terminology  
Drift correction/Heading control  
Wave off procedures  
Pattern terminology, upwind, downwind, abeam, final  
Airspeed/altitude during landing approach  
Desert/NVG landing profile  
Tactical approaches  
A/C landing gear brake limitations  
Rotor-wash effects

Performance Standards. Conduct aircrew duties during CAL/MAL operations and considerations while utilizing NVGs IAW above listed discuss items and the CH-53 NATOPS and NTTP 3-22.3-53. Perform aircrew duties during tactical CAL/MAL operations while utilizing NVGs IAW the above listed discuss and practice items and IAW CH-53 NATOPS and NTTP 3-22.3-53. Conduct a minimum 5 confined area landings.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. NSI required for all personnel in the Basic (B) POI.

Prerequisite. ACAD-2052, CAL-2210

**HLL-2221      1.5      180      B,R,M,S      HLL      A      2 CH-53K**

Goal. Introduce and practice CALs/MALs operations within a section while utilizing NS under HLL conditions.

Requirement

Introduce/Discuss

Wingman situational awareness while utilizing NS  
Wingman terminology while utilizing NS  
Section takeoffs while utilizing NS  
Section approaches while utilizing NS  
Section landings to a CAL/MAL site while utilizing NS

Practice

CC vs. AG/O responsibilities during section HLL CALs  
CRM and crew coordination during section HLL CALs  
Aircraft lighting conditions (overt/covert)  
Identifying closure rate to ground during landing  
Drift correction/Heading control  
Standard Terminology  
Pattern terminology, upwind, downwind, abeam, final  
Airspeed/altitude during landing approach  
Desert/NVG landing profile  
Aircraft/Obstacle clearance  
NVG considerations/failures  
Field of View vs. Field of Regard  
Identifying closure rate while utilizing NVGs  
Effects of shadows on terrain suitability for CAL  
Brown out/white out procedures while utilizing NVGs  
Cabin configuration/Security  
Lookout doctrine  
Identifying terrain suitability  
Wave off procedures  
Tactical approaches  
A/C landing gear brake limitations  
Rotor-wash effects

Performance Standards. Conduct CAL/MAL operations and considerations within a section while utilizing NS IAW above listed items and the CH-53 NATOPS and NTTP 3-22.3-53. Perform aircrew duties during tactical CAL/MAL operations within a section while utilizing NS IAW the above listed items and IAW CH-53 NATOPS and NTTP 3-22.3-53. Conduct a minimum of 5 confined area landings in lead position and 5 confined area landings in the wingman position.

Instructor. NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. HLL-2120, HLL-2220, CAL-2211

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

**HLL-2320      1.5      \*      B      HLL      A      1 CH-53K**

Goal. Introduce and practice maneuvers and clearance while flying in a TERF regime using NS in HLL conditions.

Requirement

Introduce/Discuss

TERF while utilizing NS in HLL  
NVG considerations/failures  
Field of View vs. Field of Regard  
Effects of shadows on terrain suitability for TERF

Practice

CC vs. AG/O responsibilities during HLL TERF  
CRM and crew coordination during HLL TERF  
Low level flight/Contour flight considerations during HLL TERF  
Cockpit Scan during TERF w/ NVGs  
Standard terminology

- Operational Power Checks
- Terrain Flight Maneuvers
- Aircraft lighting conditions
- Navigational assistance while utilizing NS
- Cabin configuration/security
- Blade tip walk around W/ NVGs
- Lookout doctrine
- Obstacle clearance
- Identifying closure rate to terrain

Performance Standards. Conduct aircrew duties in the TERF regime while utilizing NS in a HLL condition IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Instructor. NSI required for all personnel in the Basic (B) POI.

Prerequisite. ACAD-2052, TERF-2310, HLL-2120

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

**HLL-2321      1.5      180      B,R,M,S                      HLL      A      2 CH-53K**

Goal. Introduce and practice maneuvers and clearance while flying within a section in the TERF regime using NS in HLL conditions.

Requirement

Introduce/Discuss

Section TERF while utilizing NS in HLL

Practice

- CC vs. AG/O responsibilities during HLL Section TERF
- CRM and crew coordination during HLL Section TERF
- Wingman Considerations
- NVG considerations/failures
- Field of View vs. Field of Regard
- Effects of shadows on terrain suitability for TERF
- Low level flight/Contour flight considerations during HLL TERF
- Cockpit Scan during TERF w/ NVGs
- Standard terminology
- Operational Power Checks
- Terrain Flight Maneuvers
- Aircraft lighting conditions
- Navigational assistance while utilizing NS
- Cabin configuration/security
- Blade tip walk around W/ NVGs
- Lookout doctrine
- Obstacle clearance
- Identifying closure rate to terrain

Performance Standards. Conduct aircrew duties in the TERF regime while utilizing NS in a HLL condition IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. HLL-2120, TERF-2311, HLL-2320

**HLL-2920      2.0      365      B,R,M                      HLL      A      2+ CH-53K**

Goal. Introduce and practice aircrew responsibilities during tactical operations with multiple aircraft during HLL using NS.

Requirement

Introduce/Discuss

Aircraft lighting conditions  
Battlefield Illumination (BI)  
NS ITG (IR Pointers, IR buzz saw, IR Strobe)  
Light Discipline  
Emissions Control (EMCON)  
MACO Markings during HLL

Practice

CC vs. AG/O responsibilities during section HLL tactical operations  
CRM and crew coordination during section HLL tactical operations  
Cabin configuration  
Low to Medium threat environment criteria  
Escort No Fire Area's (NFA's) in the objective area  
Escort Considerations  
Control of Fires  
METT-TC  
Flight leadership roles  
Serial leader  
Pick up Zone (PZ)/Marshaling Area Control Officer (MACO)  
Mission planning products  
Go criteria/No-go criteria and Mission Abort Criteria  
Bump Plan/Late-join straggle plan  
Rules of engagement  
FENCE procedures  
Test fire area (TFA)  
Threat anticipation  
ASE utilization  
Weapons control procedures  
Tactical formation maneuvering  
Objective area considerations  
Initial Terminal Guidance (ITG) Mirror Flash/Smoke  
Initial Point (IP)/Landing zone (LZ)  
"Cherry vs. Ice" criteria  
Sectors of fire  
No Fire Areas (NFA)  
Wave-off effects  
Contingencies  
Hostile area  
Lookout doctrine  
Navigational assistance  
Wingman considerations

Performance Standards. Conduct operations in a low threat environment on NS in a HLL as stated in NTTP 3-22.3-CH53. Demonstrate knowledge/usage of mission planning products. If rounds are utilized refer to AG-2843 per respective weapon system for weapons performance standards.

Ordnance. Two .50 caliber machine guns are required. Rounds and firing of machine guns are optional though highly encouraged.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ordnance request for weapons

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. WTI's should be utilized to the max extent possible.

Prerequisite. HLL 2221, HLL 2321, TAC 2910

### 3.9.10 NS Low Light Level (LLL)

Purpose. To develop skill in the use of NS under light levels less than .0022 lux (LLL) as predicted by the Solar Lunar Almanac Prediction (SLAP) and to qualify aircrew in NS LLL operations.

#### General

Aircrew not NSQ LLL requires supervision of an NSI for all events flown with NS under .0022 lux (LLL).

Aircrew will not begin the NSQ LLL syllabus until NSQ HLL

The aircrew under instruction is considered NSQ LLL (able to transport troops under LLL conditions) when the following events have been completed: LLL-2230, LLL-2231, LLL-2330, LLL-2331, and LLL-2930. Aircrew shall fly all NS events in the NSQ LLL syllabus under ambient light conditions of below .0022 LUX.

Successful completion of LLL-2930 constitutes Night Systems Qualified (NSQ) LLL. A qualification letter signed by the commanding officer is required stating the aircrew is NSQ LLL to carry troops under LLL conditions. The original shall be placed in the aircrew's NATOPS jacket and a copy in the APR with a corresponding logbook entry.

Crew requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Low Light Level stage.

Designation. Crew Chief / Aerial Gunner/Observer  
Flight. NSQ-HLL

<b>LLL-2230</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>LLL</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce and practice single ship CALs/MALs operations using NS under LLL conditions.

#### Requirement

##### Introduce/Discuss

- CALs/MALs during LLL conditions
- LLL NS considerations
- Visual acuity degradation
- Depth perception degradation
- Distance estimation degradation
- Contrast degradation
- Effects of reduced or no shadows during CALs
- Optical flow degradation
- Scintillation

##### Practice

- CC vs. AG/O responsibilities during LLL CALs
- CRM and crew coordination during LLL CALs
- CALs/MALs during LLL conditions
- Terrain suitability
- Effects of wind
- Wave off procedures
- NVG considerations/failures
- Field of View vs. Field of Regard
- Identifying closure rate while utilizing NVGs
- Effects of shadows on terrain suitability for CAL
- Brown out/white out procedures while utilizing NVGs
- Cabin configuration/Security
- Aircraft lighting conditions (overt/covert/formation)
- Lookout doctrine
- Aircraft/Obstacle clearance
- Identifying terrain suitability



Standard Terminology  
Drift correction/Heading control  
Wave off procedures  
Pattern terminology, upwind, downwind, abeam, final  
Airspeed/altitude during landing approach  
Desert/NVG landing profile  
Tactical approaches  
A/C landing gear brake limitations  
Rotor-wash effects

Performance Standards. Conduct aircrew duties during CAL/MAL operations and considerations while utilizing NVGs IAW above listed discuss items and the CH-53 NATOPS and NTTP 3-22.3-53. Perform aircrew duties during tactical CAL/MAL operations while utilizing NVGs IAW the above listed discuss and practice items and IAW CH-53 NATOPS and NTTP 3-22.3-53. Conduct a minimum 5 confined area landings.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. NSI required for all personnel in the Basic (B) POI.

Prerequisite. NSQ HLL

**LLL-2231      1.5      180      B,R,M,S      LLL      A      2 CH-53K**

Goal. Introduce and practice CALs/MALs operations within a section while utilizing NS under LLL conditions.

Requirement

Introduce Discuss

Section CALs/MALS operations during LLL conditions  
Wingman situational awareness during LLL conditions  
Wingman terminology during LLL conditions  
Wingman crossover during LLL conditions  
Section takeoffs during LLL conditions  
Section approaches during LLL conditions  
Section landings to a CAL/MAL site during LLL conditions

Practice

CC vs. AG/O responsibilities during section LLL CALs  
CRM and crew coordination during section LLL CALs  
Terrain suitability  
Effects of wind  
Wave off procedures  
NVG considerations/failures  
Field of View vs. Field of Regard  
Identifying closure rate while utilizing NVGs  
Effects of shadows on terrain suitability for CAL  
Brown out/white out procedures while utilizing NVGs  
Cabin configuration/Security  
Aircraft lighting conditions (overt/covert/formation)  
Lookout doctrine  
Aircraft/Obstacle clearance  
Identifying terrain suitability  
Standard Terminology  
Drift correction/Heading control  
Wave off procedures  
Pattern terminology, upwind, downwind, abeam, final  
Airspeed/altitude during landing approach  
Desert/NVG landing profile  
Tactical approaches  
A/C landing gear brake limitations  
Rotor-wash effects

Performance Standards. Conduct CAL/MAL operations and considerations within a section while utilizing NS IAW above listed items and the CH-53 NATOPS and NTTP 3-22.3-53. Perform aircrew duties during tactical CAL/MAL operations within a section while utilizing NS IAW the above listed items and IAW CH-53 NATOPS and NTTP 3-22.3-53. Conduct a minimum of 5 confined area landings in lead position and 5 confined area landings in the wingman position.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. LLL-2230

**LLL-2330      1.5      \*      B      LLL      A      1 CH-53K**

Goal. Introduce and practice maneuvers and clearance while flying in a TERF regime using NS in LLL conditions.

Requirement

Introduce/ Discuss

TERF while utilizing NS in LLL

Practice

LLL NS considerations    CC vs. AG/O responsibilities during LLL TERF  
CRM and crew coordination during LLL TERF  
Rules of Conduct for TERF (Program Manual)  
Visual acuity degradation  
Depth perception degradation  
Distance estimation degradation  
Contrast degradation  
Effects of reduced or no shadows during TERF  
Optical flow degradation  
Scintillation  
Cockpit Scan during TERF w/ NVGs  
Standard terminology  
Operational Power Checks  
Terrain Flight Maneuvers  
Aircraft lighting conditions  
Navigational assistance while utilizing NS  
Cabin configuration/security  
Blade tip walk around W/ NVGs  
Lookout doctrine  
Obstacle clearance  
Identifying closure rate to terrain

Performance Standards. Conduct aircrew duties in the TERF regime while utilizing NS in a LLL condition IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. NSI required for all personnel in the Basic (B) POI.

Prerequisite. NSQ HLL

**LLL-2331      1.5      180      B,R,M,S      LLL      A      2 CH-53K**

Goal. Introduce and practice maneuvers and clearance while flying in a TERF regime using NS in LLL conditions.

Requirement

Introduce/Discuss

Multiple aircraft operations in the section TERF regime while utilizing NS in LLL.

Practice

CC vs. AG/O responsibilities during section LLL TERF  
CRM and crew coordination during section LLL TERF

LLL NS considerations  
Field of View vs. Field of Regard  
Identifying closure rate while utilizing NVGs  
Visual acuity degradation  
Depth perception degradation  
Distance estimation degradation  
Contrast degradation  
Effects of reduced or no shadows during TERF  
Optical flow degradation  
Scintillation  
Wingman Considerations  
Effects of shadows on terrain suitability for TERF  
Low level flight/Contour flight considerations during LLL TERF  
Cockpit Scan during TERF w/ NVGs  
Standard terminology  
Operational Power Checks  
Terrain Flight Maneuvers  
Aircraft lighting conditions  
Navigational assistance while utilizing NS  
Cabin configuration/security  
Blade tip walk around W/ NVGs  
Lookout doctrine  
Obstacle clearance

Performance Standards. Conduct aircrew duties in the TERF regime while utilizing NS in a LLL condition IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisite. LLL-2330

**LLL-2930      2.0      365      B,R,M,S      LLL      A      2+ CH-53K**

Goal. Introduce and practice aircrew responsibilities during medium threat tactical operations with multiple aircraft utilizing NS in the LLL environment.

Requirement

Introduce/Discuss

CC vs. AG/O responsibilities during section LLL tactical operations  
CRM and crew coordination during section LLL tactical operations

Practice

Aircraft lighting conditions  
Battlefield Illumination (BI)  
NS ITG (IR Pointers, IR buzz saw, IR Strobe)  
Light Discipline  
Emissions Control (EMCON)  
MACO Markings during LLL  
Cabin configuration/security  
Medium threat environment criteria  
Escort No Fire Area's (NFA's) in the objective area  
Escort Considerations  
Control of Fires  
METT-TC  
Flight leadership roles  
Serial leader  
Pick up Zone (PZ)/Marshaling Area Control Officer (MACO)  
Mission planning products

Go criteria/No-go criteria and Mission Abort Criteria  
Bump Plan/Late-join straggle plan  
Rules of engagement  
FENCE procedures  
Test fire area (TFA)  
Threat anticipation  
ASE utilization  
Weapons control procedures  
Tactical formation maneuvering  
Objective area considerations  
Initial Terminal Guidance (ITG) Mirror Flash/Smoke  
Initial Point (IP)/Landing zone (LZ)  
“Cherry vs. Ice” criteria  
Sectors of fire  
No Fire Areas (NFA)  
Wave-off effects  
Contingencies  
Hostile area  
Lookout doctrine  
Navigational assistance  
Wingman considerations

Performance Standards. Conduct operations in a medium threat environment on NS in a LLL environment as stated in NTTP 3-22.3-CH53. Demonstrate knowledge/usage of mission planning products. If rounds are utilized refer to AG-2843 per respective weapon system for weapons performance standards.

Ordinance. Two .50 Caliber machine guns are required. Rounds and firing of machine guns are optional though highly encouraged.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ordinance request for weapons

Instructor. NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI. WTIs should be utilized to the max extent possible.

Prerequisite. LLL-2231, LLL-2331

### 3.10 MISSION PHASE (3000)

Purpose. To introduce and develop proficiency in tactical planning, briefing and execution of a Marine Heavy Helicopter squadron’s assigned Marine Corps Tasks. Mission Skills have been developed to ensure that squadrons are capable of performing the Marine Corps Tasks (MCTs) assigned to a Marine Heavy Helicopter Squadron. Core Skills are the enablers that allow crews to perform Mission Skills.

#### General

For initial, refresher, or when the aircrew under instruction are not proficient in a particular Mission Skill, training codes shall be given by any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Skill can give the Mission Skill code to all aircrew within the flight that meet the prerequisite. Additionally any Crew Chief instructor who is proficient in the Mission skill can give the Mission Skill Code to all enlisted Crew members who meet the prerequisites.

It is the intent that all TACEX scenarios in the Core Skill and Core Plus Skill Phase be based on a minimum of one of the Mission Skills. If aircrew under instruction does not meet the prerequisite for the Mission Skill event, they will not log the Mission Skill event. However, the instructor of the Core Skill or Core Plus Skill TACEX will log both the Core Skill or Core Plus Skill event and the Mission Skill event (i.e. NSI logs a LLL-2930 and CAT-3240. CC/AG/O in the LLL syllabus logs a LLL-2930). Once aircrew have been designated NSQ LLL, all subsequent TACEXs should be coded with the appropriate Core Skill or Core Plus Skill and Mission Skill event provided aircrew under instruction meet all core skill prerequisites. Aircrew that are not proficient in a Core Skill or Core Plus Skill event may update both the Core Skill or Core Plus Skill and the Mission Skill event on the same sortie.

Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL and Aerial Gunnery Stage Complete (AGQ).

The aircrew under instruction will assist in the mission analysis, planning, briefing, execution and debriefing of each flight. Aircrew shall use the NTTP series and NATOPS as source documents for planning, briefing, execution and debriefing.

Multiple Mission Skill training events may be logged per sortie (e.g.CAT-3240, AD-3340) as long as the requirement(s) is (are) met for each code. Mission Skill phase training events are intended to be flown and logged in conjunction with other T&R syllabus events.

The CC/AG/O not eligible for the Mission Skill code will log the TAC code and the instructor will log both the TAC code and the Mission Skill event(s) that applies. Initial TAC events shall be accomplished as a section; subsequent evolutions (when logged in conjunction with a Mission Skill) may be done single ship, based on the tactical scenario.

Mission Skill events SHALL be flown with operational ASE, installed .50 calibers (as required for the tactical scenario), (rounds and expendables optional), whenever practical.

Initial attempts to complete Mission Skills should be made in the aircraft; subsequent attempts may be accomplished in the simulator.

#### Academic Training

Purpose. Prior to commencement of each event within the Mission Skill Phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

Upon completion, the CC/AG/O shall report to the designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3 (Aircrew Ground School Training) of the APR, using the Enlisted Aircrew Performance Record/Qualification Jacket Academic Tracker in Paragraph 3.17.2 of this document.

NIPR 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

As of the signing of this manual, the current HMM Core MCTs are as follows:

- Combat Assault Transport (MCT 1.3.4.1) (CAT)
- Air Delivery (MCT 4.3.4) (AD)
- Aviation Support of Tactical Recovery of Aircraft and Personnel (MCT 6.2.2.1) (TRAP)
- Air Evacuation (MCT 6.2.2) (AE)

Phase Prerequisites. The following events/designations are prerequisites prior to the commencement of the Core Mission Skill Phase.

- Flight. LLL-2930, AG-2843, GTR-2540, GTR-2541
- Designation: NSQ-LLL, AGQ

Crew Requirements: P/P/CC/AG/O

#### Phase Overview

MISSION SKILL PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
COMBAT ASSAULT TRANSPORT (CAT)	3.11.1	3-84
AERIAL DELIVERY (AD)	3.11.2	3-84
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)	3.11.3	3-85
AIR EVACUATION (AE)	3.11.4	3-86

### 3.11 MISSION STAGES

#### 3.11.1 Combat Assault Transport (CAT)

**ACAD-3082      0.8      \*      B      G**

Goal. Completion of NEO Execution academic requirements.

Requirement. Complete all NEO Execution training modules.

Performance Standard. Per current evaluation criteria for NEO Execution training

**CAT-3240      2.0      365      B,R,M      (NS)      A/S      2+ CH-53K**

Goal. Demonstrate the capability to conduct combat assault transport operations in a low to medium threat environment. Aviation combat assault transport operations provide mobility to the MAGTF. It is used to deploy forces (air-landed or air-delivered) efficiently in offensive maneuver warfare, bypass obstacles, or quickly redeploy forces. Combat assault support transport allows the MAGTF Commander to build up his forces rapidly at a specific time and location, and allows him to apply and sustain combat power and strike the enemy where he is unprepared. This function comprises those actions required for the airlift of personnel, supplies and equipment into or within the battle area by helicopter, tilts rotor or fixed-wing aircraft;(JP 3-0, 4-0, MCWP 3-20, MAWTS-1).

Requirement

Review

TAC-2911 (as applicable)

HLL-2920 (as applicable)

LLL-2930 (as applicable)

Performance Standard. Plan, brief and execute a tactical assault support mission (MARLOG, general support, NEO, resupply, insert, extract). If an L-Hour is utilized arrive in the LZ +/- 30 seconds in the best position to support the ground combat element. Demonstrate a thorough understanding of objective area mechanics, command and control procedures, and fire support control measures. Demonstrate a thorough understanding of proper procedures to secure cargo and personal gear.

Ordnance. Two .50 caliber machine guns are required (Tail gun is optional), rounds and firing of the machine guns are optional.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Escort and/or Command and Control aircraft are preferred if available. Ground combat element preferred if available.

Instructor. Any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Skill can give the Mission Skill code to all aircrew within the flight that meet the prerequisite. Additionally any Crew Chief instructor who is proficient in the Mission skill can give the Mission Skill Code to all enlisted Crew members who meet the prerequisites.

Prerequisite. NSQ LLL, AGQ, ACAD-3082, GTR-2540, GTR-2541

#### 3.11.2 Aerial Delivery (AD)

**AD-3340      2.0      365      B,R,M      (NS)      A/S      2+ CH-53K**

Goal. Demonstrate the ability to conduct air delivery in a low to medium threat environment. Air delivery is in-flight transportation of equipment and supplies to remote areas or expeditionary sites [tactical landing zones, austere forward operating sites, Naval shipping, Forward Operating Bases (FOBs), Expeditionary Airfields (EAFs), Forward Arming and Refueling Points (FARPs), etc.]. Air delivery operations are performed by fixed-wing, tilt rotor or rotary-wing aircraft. Delivery can be accomplished with aircraft internal/external loads, or loads can be air dropped using specially rigged aerial delivery equipment and systems. Air drops are normally used when surface of helicopter transports cannot be used because of range, closed lines of communications, a lack of adequate airfields, a prohibitive ground tactical situation, high tonnage, or reduced response time. The Helicopter Support Team (HST)

may be used during air delivery operations. Air delivery operations require detailed planning and integration at all levels and must support units in a rapidly changing environment. (JP 1, 3-0, 4-0, MCWP 3-20, MCTP 3-01B, MCTP 3-20A, 4-1, 4-11, 4-11.3, NDP-4, NWP 4-01, NAVSUP PUB Series)

Requirement

Review

EXT-2410, EXT-2411, TEXT-4440 (as required)  
EXT-2420, EXT-2421, EXT-2430, TEXT-4440 (as required)  
HIE-4141 or HIE-4110 (as required)  
TAC-2910  
TAC-2911  
HLL-2920 (as applicable)  
LLL-2930 (as applicable)

Performance Standard. Plan, brief and execute a tactical aerial delivery mission (External operations, internal cargo operations, or air drop) in a low to medium threat environment. If an L-Hour is utilized arrive in the LZ +/- 30 seconds.

Ordnance. Two .50 caliber machine guns are required (Tail gun is optional). Rounds and firing of the machine guns are optional.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. HST. Jump master and ground safety personnel as required.

Instructor. Any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Skill can give the Mission Skill code to all aircrew within the flight that meet the prerequisite. Additionally any Crew Chief instructor who is proficient in the Mission skill can give the Mission Skill Code to all enlisted Crew members who meet the prerequisites.

Prerequisite. Aircrew must be proficient in the appropriate aerial delivery method being executed, EXT-2430, NSQ LLL, AGQ, GTR-2540, GTR-2541.

3.11.3 Tactical Recovery of Aircraft and Personnel (TRAP)

**ACAD-3084    1.0    \*    B    G**

Goal. Completion of Personnel Recovery academic requirements.

Requirement. Complete all Personnel Recovery training modules.

Performance Standard. Per current evaluation criteria for Personnel Recovery training.

**ACAD-3085    0.8    \*    B    G**

Goal. Completion of TRAP TTP's academic requirements.

Requirement. Complete all TRAP TTP's training modules.

Performance Standard. Per current evaluation criteria for TRAP TTP's training.

**TRAP-3440    2.0    365    B,R,M    (NS)    A/S    2+ CH-53K**

Goal. Demonstrate the ability to conduct Tactical Recovery of Aircraft and Personnel (TRAP) in a low to medium threat environment. Tactical Recovery of Aircraft and Personnel (TRAP) is performed for the specific purpose of the recovery of personnel, equipment, and/or aircraft. TRAP is conducted to locate and extract distressed personnel and sensitive equipment from enemy controlled area during wartime or contingency operations to prevent capture. TRAP is performed by an assigned and briefed aircrew and is a subcomponent of combat search and rescue (CSAR) and/or joint combat search and rescue (JCSAR) missions, but is only executed once the location of survivors is confirmed. A TRAP mission may include personnel to conduct the search portion of CSAR or the over water portion of search and rescue missions. The composition of a tactical recovery mission may vary from a single aircraft and aircrew to an assault support mission package that consists of multiple fixed-wing and rotary-wing

aircraft with an onboard complement of security, ground search, and medical personnel. (JP 1, JP 3-0, JP 3-50.2, MCWP 2-10A.2, MCWP 3-20, MCTP 3-01B, MCTP 3-20E, MCRP 3-20F.2, NDP 1, NWP 3-05)

Requirement

Introduce

- TRAP template from ASTACSOP
- ISR employment
- RESCORT considerations
- Rescue vehicle responsibilities
- ISOPREP verification considerations
- RMC command and control considerations
- Survival Radio operation
- ACEOI

Performance Standard. Plan, brief and execute a TRAP mission. Properly employ TRAP template. Effectively communicate with Isolated Personnel, RESCORT, RMC and other supporting aircraft.

Ordnance. Two .50 caliber machine guns are required (Tail gun is optional). Rounds and firing of the machine guns are optional.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Escort and/or Command and Control aircraft are preferred if available. Isolated personnel in the objective area are preferred. Use of survival radios is preferred. Ground combat element is preferred if available.

Instructor. Any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Skill can give the Mission Skill code to all aircrew within the flight that meet the prerequisite. Additionally any Crew Chief instructor who is proficient in the Mission skill can give the Mission Skill Code to all enlisted Crew members who meet the prerequisites.

Prerequisite. NSQ LLL, AGQ, ACAD-3084, ACAD-3085, GTR-2540, GTR-2541

3.11.4 Air Evacuation (AE)

<b>ACAD-3086</b>	<b>0.5</b>	<b>*</b>	<b>B</b>	<b>G</b>
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Goal. Completion of CASEVAC academic requirements.

Requirement. Complete all CASEEVAC training modules.

Performance Standard. Per current evaluation criteria for CASEVAC training.

<b>AE-3540</b>	<b>2.0</b>	<b>365</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A/S</b>	<b>2+ CH-53K</b>
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Goal. Demonstrate the ability to conduct an air evacuation operation in a low to medium threat environment. Air evacuation is the transportation of personnel and equipment from areas of operations to secure rear areas, to include casualty evacuations (CASEVAC), extraction of forces, or civilians. Transport helicopters, tilt rotor, and fixed-wing transport aircraft perform air evacuations. (JP 3-10.1, MCDP 1-0, MCWP 3-20, MCTP 3-01B, MCTP 3-10F, MCTP 3-20E, MCWP 3-25, 3-27, 3-36)

Requirement

Review

INT-2106

Introduce

- Casualty priorities
- Medical facility levels
- Aircraft configuration considerations
- Mass Casualty aircraft configuration

Performance Standard. Plan, brief and execute a tactical air evacuation mission. If an L-Hour is utilized arrive in the LZ +/- 30 sec in a position to best support the ground combat element.



Ordnance. Two .50 caliber machine guns are required (Tail gun is Optional); Rounds and firing of the machine guns are optional.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. Any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Skill can give the Mission Skill code to all aircrew within the flight that meet the prerequisite. Additionally any Crew Chief instructor who is proficient in the Mission skill can give the Mission Skill Code to all enlisted Crew members who meet the prerequisites.

Prerequisite. NSQ LLL, AGQ, ACAD-3086, GTR-2540, GTR-2541

### 3.12 CORE PLUS PHASE (4000)

Purpose. To introduce and develop proficiency in the execution of the Core Plus Skills and Missions required as a crew chief/aerial observer within a Marine Heavy Helicopter Squadron (HMH). Core Plus skills have a low probability of execution or are theater specific and are not included in the unit readiness evaluation.

General. Within the Core Plus Phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

Upon completion, the CC/AG/O shall report to the designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3 (Aircrew Ground School Training) of the APR, using the Enlisted Aircrew Performance Record/Qualification Jacket Academic Tracker in Paragraph 3.17.2 of this document.

2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53K T&R:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53K T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

### Phase Overview

CORE PLUS SKILL STAGES		
STAGE	PARAGRAPH	PAGE NUMBER
HELICOPTER INSERTION AND EXTRACTION TECHNIQUES (HIE)	3.13.1	3-87
AVIATION DELIVERED GROUND REFUELING (ADGR)	3.13.2	3-90
BATTLEFIELD ILLUMINATION (BI)	3.13.3	3-91
TERRAIN FLIGHT EXTERNALS (TERF EXT)	3.13.4	3-92
INDEPENDANT HOOK EXTERNALS (IND EXT)	3.13.5	3-93
DEFENSIVE MEASURES (DM)	3.13.6	3-95
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR (CBRN)	3.13.7	3-97
FIELD CARRIER LANDING PRACTICE (FCLP)	3.13.8	3-98
DAY CARRIER QUALIFICATION (DCQ)	3.13.9	3-100
UNAIDED CARRIER QUALIFICATION (UACQ)	3.13.10	3-101
NIGHT SYSTEMS CARRIER QUALIFIED (NSCQ)	3.13.11	3-101
TAIL GUNNERY (TG)	3.13.12	3-103
TACTICS (TAC)	3.13.13	3-108

### 3.13 CORE PLUS STAGES

#### 3.13.1 Helicopter Insertion/Extraction Techniques (HIE)

Purpose. To introduce HIE methods required in executing special operations.

General. The CC shall conduct a brief with the specific team leader, then the entire team prior to take off to discuss mission requirements and aircraft safety procedures.

Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Helicopter Insertion & Extraction Techniques:

Academic: See event

Flight: see event

Designation: CC/AG/O

**HIE-4110      1.5      485      B,R,M                      D      A      1 CH-53K**

Goal. Introduce and practice procedures for tactical insertion helocast.

Requirement

Introduce/ Discuss

- CC vs. AG/O responsibilities during helocast operations (NTTP)
- CRM and crew coordination during helocast operations
- Cabin configuration/security
- Safety considerations with ramp open and passengers onboard
- Crew coordination/CRM with jump master
- Hand and arm signals with jump master
- Altitude for helocast boat release
- Time to disconnect the boat from its A/C attachment point
- Tail rotor clearance
- Airspeed for helocast
- Responsibilities and duties of Helocast Master
- Responsibilities and duties of the HAC
- Responsibilities and duties of the Crew Chief
- Standard terminology
- Vertigo and visual illusions while hovering over water
- Emergency procedures during helocast operations

Practice

- CC vs. AG/O responsibilities during helocast operations
- CRM and crew coordination during helocast operations
- Safety procedures
- Communication with serial leader/ Helo-cast Master
- Intraplane communication

Performance Standards. Conduct procedures for a tactical insertion via helocast IAW applicable NTTP 3-22.3-53.

External Syllabus Support. Helocast Master, safety boat and safety personnel

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. TERFQ, INT-2106

**HIE-4140      1.5      \*      B                      (NS)      A      1 CH-53K**

Goal. Introduce and practice tactical insertion and/or extraction of a ground force via fast rope, rappelling, or SPIE.

Requirement

Introduce /Discuss

- CC vs. AG/O responsibilities during HRST operations
- CRM and crew coordination during HRST operations
- Cabin configuration/security
- Safety considerations with door/ramp open and passengers onboard
- Aircraft/Obstacle clearance
- DZ/PZ Selection
- Wooded and mountain HRST operations
- Night operations
- Tactical insertions
- Effects of rotor downwash
- Static electricity build-up

Associated equipment  
Mandatory commands  
Advisory commands  
Hand and arm signals  
Lost communications/ICS failure  
Responsibilities and duties of HRST Master  
Responsibilities and duties of the HAC  
Responsibilities and duties of the Crew Chief  
Helicopter rappel operations  
Special Patrol Insertion/Extraction (SPIE) System  
Night SPIE  
SPIE from water  
Sequence of events  
Emergency procedures for HIE operations

Practice

CC vs. AG/O responsibilities during HRST operations  
CRM and crew coordination during HRST operations  
Cabin configuration during HIE Operations  
Hand and arm signals  
Intraplane communication

Performance Standards. Conduct tactical insertion and/or extraction of a ground force via rappelling, fast-rope or SPIE IAW applicable NATOPS and NTP 3-22.3-53.

External Syllabus Support. HRST Master and ground safety personnel

Instructor. TERFI required for all personnel in the Basic (B) POI. NSI required if conducted at night.

Prerequisite. CAL-2210, (HLL-2920~NS or LLL-2930~LLL)

**HIE-4141      1.5      \*      B      (NS)      A      1 CH-53K**

Goal. Introduce and practice procedures for tactical insertion of personnel via para/Ops.

Requirement

Introduce /Discuss

CC vs. AG/O responsibilities during Para-Ops  
CRM and crew coordination during Para-Ops  
Safety considerations with door/ramp open/tail skid and passengers onboard  
Sequence of events  
Para/Ops Terminology  
Container delivery system  
Fouled/hung jumper  
Responsibilities and duties of Jumpmaster  
Responsibilities and duties of the HAC  
Responsibilities and duties of the Crew Chief

Practice

Cabin configuration/security  
Safety procedures  
Emergency procedures  
Hand and arm signals  
Intraplane communication  
Cabin control

Performance Standards. Conduct procedures for tactical insertion via Para/Ops IAW TM 70244A-OI/A, MCWP 3-315.7, and applicable NTP 3-22.3-53.

External Syllabus Support. Jump master and ground safety personnel

Instructor. TERFI required for all personnel in the Basic (B) POI. NSI required if conducted at night.

Prerequisite. HLL-2920~NS or LLL-2930~LLL

**HIE-4142      1.5      \*      B      (NS)      A      1 CH-53K**

Goal. Introduce and practice procedures for tactical insertion of cargo via para/Ops.

Requirement

Introduce /Discuss

- CC vs. AG/O responsibilities during Para-Ops
- CRM and crew coordination during Para-Ops
- Safety considerations with door/ramp open/tail skid and passengers onboard
- Sequence of events
- Para/Ops Terminology
- Container delivery system
- Fouled/hung container
- Responsibilities and duties of Jumpmaster
- Responsibilities and duties of the HAC
- Responsibilities and duties of the Crew Chief

Practice

- Cabin configuration/security
- Safety procedures
- Emergency procedures
- Hand and arm signals
- Inter-plane communication
- Cabin control

Performance Standards. Conduct procedures for tactical insertion via Para/Ops IAW applicable NTTP 3-22.3-53.

External Syllabus Support. Jump master and ground safety personnel

Instructor. TERFI required for all personnel in the Basic (B) POI. NSI required if conducted at night.

Prerequisite. HLL-2920~NS or LLL-2930~LLL

**3.13.2    Aviation Delivered Ground Refueling (ADGR)**

Purpose. To introduce aircrew duties in loading, securing, unloading, internal procedures and use of the Tactical Bulk Fuel Delivery System (TBFDS) for the CH-53K.

Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the ADGR Stage.

Academic: See MAWTS-1 Course Catalog.

Flight: see event

Designation: CC/AG/O

**ACAD-4011      1.0      \*      B      G**

Goal. Completion of EA Aviation Delivered Ground Refueling (ADGR) academic requirements.

Requirement. Complete all EA ADGR training modules.

Performance Standard. Per current evaluation criteria for EA ADGR training.

**ADGR-4240      1.5      365      B,R,M      (NS)      G      1 STATIC CH-53K**

Goal. Introduce and practice installation and setup of TBFDS system and become familiar with FARP operations.

Requirement

Introduce/Discuss

- CC vs. AG/O responsibilities during Static or FARP ADGR operations

CRM and crew coordination during static or FARP ADGR operations  
Receiver Assets  
Ingress/Egress  
Hydraulic system temperatures for extended use of systems  
TBFDS refueling methods (gravity/pressure/refueling)  
TBFDS offload methods  
Types of FARPs  
Crew member/MMT responsibilities  
FARP setup/preflight  
FARP day/night operations  
A/C lighting considerations/configurations  
Chemical light utilization (TBFDS components/personnel/ITG)  
Pressurize hoses before customer arrives  
Fuel connection ports for various type aircraft/vehicles  
Danger zones for various types of aircraft/vehicles

Practice

Crew member responsibilities  
Cabin configuration of ADGR equipment  
TBFDS Checklist (NTRP App H)  
Installation considerations for TBFDS  
Various TBFDS loading and unloading methods  
Various TBFDS tank configurations and considerations  
TBFDS loading  
TBFDS restraint system  
TBFDS offload methods  
Switchology for fuel delivery/range extension/refuel  
Refueling procedures  
FARP post flight and clean up  
Firefighting equipment/procedures  
Safety procedures (Hazmat)  
Hand and arm signals

Performance Standards. Conduct TBFDS setup and aviation ground delivered refueling operations IAW above listed items, NTTP 3-22.3-53, NTRP 3-22.4 CH53 Appendix H

External Syllabus Support. TBFDS, ground assets to refuel, aviation assets to refuel

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

Prerequisite. INT-2105, HLL-2210, HLL-2920~HLL, LLL-2930~LLL, ACAD-4011

3.13.3 Battlefield Illumination (BI)

Purpose. To develop skills necessary to conduct Battlefield Illumination operations.

General. Review and be familiar with planning considerations, acceptance inspection, cabin set up, emergency procedures, crew responsibilities, and BI checklist utilization IAW NTTP series manuals.

Crew Requirement. P/P/CC and AG/O. If conducted from the ramp, consideration should be given to a third crew member in the back for lookout coverage and safety considerations.

**Note**

There are two methods of delivering BI, one from the External Hatch and the other from the cargo ramp. It is recommended to conduct all initial training from the ramp, in the event the external hatch is covered by cargo/Troops.

Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

**ACAD-4054    1.0    \*    B    G**

Goal. Completion of EA Battlefield Illumination (BI) academic requirements.

Requirement. Complete all EA BI training modules.

Performance Standard. Per current evaluation criteria for EA BI training.

**BI-4340      1.5      1095      B,R,M      NS      A      1 CH-53K**

Goal. Conduct Aviation-Delivered Battlefield Illumination in support of night tactical operations.

Requirement

Introduce/Discuss

Planning products and execution of BI  
Required equipment to conduct BI missions  
APF acceptance  
Cabin configuration/security  
Emergency procedures (Hot flare & timer separation)  
NVD utilization/considerations  
Pilot & Safety Observer ICS procedures  
Checklist utilization

Practice

Planning products and execution of BI  
Required equipment to conduct BI missions  
CC vs. AG/O responsibilities during BI operations  
CRM and crew coordination during BI operations

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Ordinance Requirements. 6x LUU-2 or 6x LUU-19

Performance Standards. Plan, conduct, and execute a BI mission, IAW NTTP series publications.

Instructor. APFI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. NSQ-LLL, AGQ, ACAD-4054

3.13.4 Terrain Flight External Loads (TERF EXT)

Purpose. To develop skills necessary to conduct external operations in the terrain flight regime under all ambient conditions.

General. Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, NTTP series and MCRP 4-11.3E Multi-Service Helicopter Sling Load Manual.

Crew Requirement. P/P/CC/ AG/O

Prerequisites. NSQ for appropriate light level.

**NOTE**

It is recommended that consideration should be given to adding a third crewmember in the cabin in order to maintain a full 360 degree lookout capability while conducting external operations in a TERF environment.

Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites

Academic: See event  
Flight: 2411, 2421, 2430  
Designation: CC and AG/O

**EXT-4440      1.5      365      B,R,M      (NS)      A      1+ CH-53K**

Goal. Introduce and practice external operations while in the TERF regime.

Requirement

Review

TERF-2310 or 2330 as applicable  
EXT-2410 thru EXT-2430 as applicable

Introduce/Discuss

External operations while in the TERF environment

Practice

CC vs. AG/O responsibilities during TERF EXT operations  
CRM and crew coordination during TERF EXT operations  
Cabin configuration/security  
Standard terminology  
ICS procedures/failure  
External load clearance during TERF  
External load clearance while conducting TERF maneuvers  
Radar altimeter utilization  
External load stability in flight while in the TERF regime  
Cargo pendant release procedures  
Aircraft emergency with external load during TERF  
Emergency external jettison procedure  
External Procedures as applicable (HLL/LLL/DP/ SP)

Performance Standards. Conduct single or dual point external operations while in the TERF regime and utilizing Night Systems as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items. Execute a minimum of 1 pickup and 1 drop off within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. HST, certified external load

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

Prerequisite. TERF-2320~NS, EXT-2420~NS, TERF-2330~LLL and EXT-2430~LLL. EXT-2421 if dual points are utilized.

3.13.5 Independent Hook External Loads (IND EXT)

Purpose. To develop skills necessary to conduct independent external operations under all ambient conditions.

General. Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, NTTP series and MCRP 4-11.3E Multi-Service Helicopter Sling Load Manual.

Crew Requirement. P/P/CC/ AG/O

Prerequisites. NSQ for appropriate light level.

**NOTE**

It is recommended that consideration should be given to adding a third crewmember in the cabin in order to maintain a full 360 degree lookout capability while conducting independent external operations.

Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

Prerequisites

Academic: See event  
Flight: 2411, 2421, 2430  
Designation: CC and AG/O

**EXT-4441      1.5      \*      B      D      A      1 CH-53K**

Goal. Introduce and practice independent hook external operations.

Requirement

Introduce

- Independent cargo hook system
- Pre-flight/hook checks
- Cargo hook control panel/switches
- Aircrew portable pendant control
- Cargo hook emergency release methods
- Aircraft emergency with external load
- AG/O duties during Externals

Discuss/Practice

- CC vs. AG/O responsibilities
- CRM and crew coordination
- Cabin configuration/inspection prior to 1<sup>st</sup> external lift
- Gunner's belt attachment location
- Operational Power Checks
- Weight limitation for external load (min & max)
- HST brief per NTTP 3-22.5
- Hand and arm signals
- Static discharge precautions
- Obstacle clearance on ingress/departure
- Blowing debris in zone
- Standard terminology
- Hook placement in relation to HST personnel
- Drift identification/correction over the external load
- Safe pick up/drop off vs. perfect pick up/drop off
- Hazards/damage of dragging of external load
- Sling considerations during external load drop off
- Wave off procedure before, during, & after hook is loaded
- Terrain suitability for external drop off
- ICS failure while in the single point external hatch
- Cabin configuration/security
- Lookout doctrine

Performance Standards. Conduct independent external operations as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External syllabus support. HST, Independent loads.

Instructor. TERFI required for all personnel in the Basic (B) POI.

Prerequisite. CAL-2210, EXT-2411

<b>EXT-4442</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M</b>	<b>NS</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce and practice independent external operations using NS in HLL or LLL conditions.

Requirement

Introduce/Discuss

- NS considerations as applicable to independent external operations
- Field of View (FOV) vs. Field of Regard (FOR)
- Use of chemical lights

Practice

- CC vs. AG/O responsibilities during NS Independent EXT operations
- CRM and crew coordination during NS Independent EXT operations
- Aircrew portable pendant control
- Pre-flight/hook checks



Cabin configuration/inspection prior to 1<sup>st</sup> external lift  
Gunner's belt attachment location  
Operational Power Checks  
Brown out/white out procedures  
Movement in the cabin with external hatch open  
Multiservice Helicopter Sling Load Manual  
Weight limitation for external load (min & max)  
HST considerations  
Hand and arm signals  
Static discharge precautions  
Obstacle clearance on ingress/departure  
Standard terminology  
Drift identification/correction over the external load  
Safe pick up/drop off vs. perfect pick up/drop off  
Sling considerations during external load drop off  
Wave off procedure before, during, & after hook is loaded  
Terrain suitability for external drop off  
ICS failure while in the external hatch  
Aircraft emergency with external load  
Standard external load vs. heavy lift load  
AG/O duties during Externals  
Cabin configuration/security  
Lookout doctrine

Performance Standards. Conduct independent external operations while utilizing Night Systems in HLL conditions as outlined in the NATOPS and NTTP 3-22.3-CH53. Perform all above listed items. Execute 5 pickups and 5 drop offs within 5 meters of intended point of delivery.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. HST, independent loads.

Instructor. NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. CAL-2220 and EXT-2421 or EXT-2430 depending on light level conducted

### 3.13.6 Defensive Measures (DM)

Purpose. To introduce aircrew responsibilities during section DM against helicopter and fixed-wing aggressor aircraft. Upon completion of this stage the aircrew should have an understanding of the maneuvers and employment techniques necessary to counter an air-to-air threat. Aircrew may be designated DMQ by the Commanding Officer after completing DM-4510 and DM-4511.

Crew Requirement. P/P/CC/AG/O

Ground Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

#### Prerequisites

Academic. See event  
Flight. TERF-2311  
Designation. CC/AG/O  
Qualification. TERFQ, AGQ

**ACAD-4051    1.0    \*    B    G**

Goal. Completion of DM/GTR 1 academic requirements.

Requirement. Complete all DM/GTR 1 training modules.

Performance Standard. Per current evaluation criteria for DM/GTR 1 training.

**ACAD-4052      1.0      \*      B      G**

Goal. Completion of DM/GTR 2 academic requirements.

Requirement. Complete all DM/GTR 2 training modules.

Performance Standard. Per current evaluation criteria for DM/GTR 2 training.

**DM-4510      1.5      365      B,R,M      D      A      2 CH-53K**

Goal. Introduce and practice aircrew responsibilities as a section against a rotary wing adversary.

Requirement

Introduce/Discuss/Practice

CC vs. AG/O responsibilities during RW DM  
CRM and crew coordination during RW DM  
Cabin configuration/security  
Section DM against a rotary wing adversary  
Rotary wing attack profiles  
DM training syllabus 3-22.3-CH53 Appendix A  
Five axioms of survival  
Rules of engagement  
Standard terminology  
DM walk through  
DM line numbers  
Section tactical maneuvers  
Mutual support/wingman position  
Free and engaged roles and responsibilities  
Aircraft limitations  
Weapons handling  
Weapons lead techniques  
1/2 Time of flight for .50 caliber ordnance  
ASE utilization  
Aircraft performance categories  
Adversary weapons envelope  
ACM in comparison to DM training  
Aircraft emergency procedures

Performance Standards. Conduct helicopter Defensive Measures against a rotary wing adversary threat IAW above listed items and NTTP 3-22.3-53 Appendix A Defensive Measures Syllabus. Explain/Demonstrate utilization of the appropriate ASE and on board weapons in relation to the threat. Display situational awareness during all DM training line numbers. Demonstrate attack warning and suggested maneuver against rotary wing threats. Utilize standard terminology in intra-plane communications.

Ordnance. 60 flares or 30 chaff/30 flares and 2 .50 Caliber machine guns (tail gun optional)

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Rotary wing aggressor

Instructor. DMI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. TERFQ, AGQ, ACAD-2581, ACAD-2580, ACAD-2582, ACAD-4051, ACAD-4052 Review ACAD-2050.

**DM-4511      1.5      365      B,R,M      D      A      2 CH-53K**

Goal. Introduce and practice aircrew responsibilities as a section against a fixed wing adversary.

Requirement

Introduce/Discuss/Practice

CC vs. AG/O responsibilities during FW DM

CRM and crew coordination during FW DM  
Cabin configuration/security  
Section DM against a fixed wing adversary  
Fixed wing attack profiles  
DM training syllabus 3-22.3-CH53 Appendix A  
Five axioms of survival  
Rules of engagement  
Standard terminology  
DM walk through  
DM line numbers  
Mutual support/wingman position  
Free and engaged roles and responsibilities  
Aircraft limitations  
Weapons handling  
Weapons lead techniques  
1/2 Time of flight for .50 caliber ordnance  
ASE utilization  
Aircraft performance categories  
Adversary weapons envelope  
ACM in comparison to DM training  
Aircraft emergency procedures  
ICS procedures/failure

Performance Standards. Conduct helicopter section Defensive Measures against a fixed wing adversary threat IAW the NTTP 3-22.3-53 Appendix A Defensive Measures Syllabus. Explain/Demonstrate utilization of the appropriate ASE and on board weapons in relation to the threat. Display situational awareness during all DM training line numbers. Demonstrate attack warning and suggested maneuver against fixed wing threats. Utilize standard terminology in intra-aircraft communications.

Ordnance. 60 flares or 30 chaff/30 flares and 2 .50 caliber machine guns (tail gun optional)

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Fixed wing aggressor

Instructor. DMI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. TERFQ, AGQ, ACAD-2581, ACAD-2580, ACAD-2582, ACAD-4051, ACAD-4052 Review ACAD-2050, ACAD-2580.

### 3.13.7 Chemical, Biological, Radiological and Nuclear (CBRN)

Purpose. To conduct flight operations while wearing NBC protective equipment.

General. For the safe execution of initial CBRN flights, one pilot and one air crewman shall remain unmasked.

Crew Requirement. P/P/CC/AG/O if done in the aircraft

Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Chemical, Biological, Radiological and Nuclear stage event descriptions.

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Chemical, Biological, Radiological and Nuclear stage:

Academic. See MAWTS-1 Course Catalog  
Flight. CAL-2210  
Designation/Qualification. CC/AG/O

**CBRN-4600    1.5    1095    B,R,M    (NS)    G    1 STATIC CH-53K**

Goal. Conduct flight in a simulated CBRN environment

Requirement

Introduce/Discuss

- CC vs. AG/O responsibilities during CBRN Operations
- CRM and crew coordination during CBRN Operations
- Wearing of CBRN equipment in the aircraft
- Distortion of vision
- Distorted Communications
- Proper use of CBRN defensive equipment
- NS concerns with CBRN equipment

Practice

- Taxi, low work, pattern work
- Confined area landings
- Communications

Performance Standards. Conduct Aircrew responsibilities while wearing CBRN gear. Communicate effectively while wearing CBRN gear.

Prerequisite. CAL-2210, CAL-2220~NS, CAL-2230~LLL

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor: TERFI that is CBRN-4600 complete required for all personnel in the Basic (B) and Refresher (R) POI. NSI that is CBRN-4600 required if conducted at night.

3.13.8 Field Carrier Landing Practice (FCLP)

Purpose. To develop skills and CRM required for shipboard operations.

General. Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the carrier qualification stage as described in the CH-53 NATOPS Flight Manual, NWP-42, the LHA/LPH/LHD NATOPS, and CNAF M-3710.7.

Crew Requirement. FCLP-4710: P/P/CC and FCLP-4742: P/P/CC/AG/O. NS flights require 2 qualified crewmembers unless it is an instructional flight.

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 chapter of the MAWTS-1 Course Catalog.

<b>SFCLP-4700</b>	<b>1.0</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>S</b>	<b>MCAT</b>
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Goal. Introduce and practice day FCLPs.

Requirement

Introduce/ Discuss:

- Aircraft Lighting
- Shipboard operations
- Air space de-confliction
- Hand and arm signals
- Parking brake procedures
- Heading and drift corrections
- Standard Terminology
- Deck Markings
- LSE Signals
- Air Space Control in the Shipboard Environment

Practice

- CC vs. AG/O responsibilities during shipboard operations
- CRM and crew coordination during shipboard operations
- Identifying closure rate to ground (deck) during landing
- Cabin security

Performance Standards. Perform a minimum of 5 FCLPs IAW appropriate shipboard NATOPS.

External Syllabus Support. Aircraft/Simulator

Instructor. TERFI required for all personnel in the Basic (B) POI.

Prerequisite. CAL-2210

**FCLP-4710      1.5      365      B,R,M                      D      A      1 CH-53K**

Goal. Introduce and practice day FCLPs.

Requirement

Introduce/ Discuss

Aircraft Lighting  
Shipboard operations  
Air space de-confliction  
Hand and arm signals  
Parking brake procedures  
Heading and drift corrections  
Standard Terminology  
Deck Markings  
LSE Signals  
Air Space Control in the Shipboard Environment

Practice

CC vs. AG/O responsibilities during shipboard operations  
CRM and crew coordination during shipboard operations  
Identifying closure rate to ground (deck) during landing  
Cabin security

Performance Standards. Perform a minimum of 5 day FCLPs IAW appropriate shipboard NATOPS.

External Syllabus Support. FCLP pad

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. SFCLP-4700

**FCLP-4742      1.5      365      B,R,M                      NS      A      1 CH-53K**

Goal. Introduce and practice NS FCLPs.

Requirement

Introduce/ Discuss:

NS considerations for appropriate light level  
Shipboard lighting  
Aircraft Lighting

Practice

CC vs. AG/O responsibilities during NS shipboard operations  
CRM and crew coordination during NS shipboard operations  
Identifying closure rate to ground (deck) during landing  
Parking brake procedures  
Heading and drift corrections  
Standard Terminology  
Cabin configuration/security

Performance Standards. Conduct a minimum of 5 NS FCLPs IAW appropriate shipboard NATOPS.

External Syllabus Support. FCLP pad

Instructor. NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. HLL-2220~NS, LLL-2230~LLL, and FCLP-4710

### 3.13.9 Day Carrier Qualification (Day CQ)

Purpose. To qualify aircrew for day shipboard operations. The term “Day Carrier Qualification” encompasses all day shipboard landing operations.

#### General

Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the Day Carrier Qualification stage as described in the appropriate NATOPS Flight Manual, NAVMC 3500.14, NWP-42, LHA/LHD NATOPS, and CNAF M-3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

5 day FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53K NATOPS, Chapter 8, Shipboard Procedures.

Initial day carrier qualification shall be made under ideal weather conditions to include a visible horizon.

Each initial or refresher instructional flight requires a minimum of 5 carrier landings; additional carrier landings can be conducted to demonstrate proficiency.

Crew Requirement. DCQ-4711: P/P/CC. For passenger operations during Day CQs crew requirements are P/P/CC/and AG/O

Ground Academic Training. Aircrew should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and CNAF M-3710.7 regarding shipboard operations.

Prerequisites. FCLP-4710

<b>DCQ-4711</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce and practice day CQs.

#### Requirement

##### Introduce/ Discuss

CC vs. AG/O responsibilities during day CQ  
CRM and crew coordination during day CQ

##### Practice

Cabin configuration/security  
Day Carrier Qualifications  
Feet wet/landing checklist  
Wind envelopes  
Aircraft lighting procedures  
Deck markings  
LSE signals  
Voice procedures/Lost communication procedures  
Shipboard landing patterns  
Shipboard holding patterns  
Shipboard instrument patterns  
Shipboard emergencies  
Air space control in the shipboard environment  
Parking brake procedures  
Heading and drift corrections  
Standard Terminology  
Aircraft clearance  
Identifying closure rate  
Hand and arm signals

Performance Standards. Conduct 5 day CQs IAW above listed items, CH-53 NATOPS and appropriate shipboard NATOPS.

External Syllabus Support. Helicopter capable ship

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

Prerequisite. FCLP-4710 and proficient

### 3.13.10 Night Unaided Carrier Qualification (Unaided CQ)

**Purpose.** To qualify Aircrew for unaided shipboard operations. The term “night unaided carrier qualification” encompasses all night unaided shipboard landing operations.

**General.** Discuss and become familiar with all aspects of unaided shipboard operations and CRM applicable to the Carrier Qualification stage as described in the appropriate NATOPS Flight Manual, NAVMC 3500.14, NWP-42, LHA/LHD NATOPS, and CNAF M- 3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

5 day FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53K NATOPS, Chapter 8, Shipboard Procedures. Each initial or refresher instructional flight requires a minimum of 5 CQs; additional CQs as required to demonstrate proficiency.

At least 2 day shipboard landings must be made on the day of the night unaided qualification. Initial Night Unaided Carrier Qualification training shall be accomplished under High Light Level conditions. IAW the NAVMC 3500.14D T&R Program Manual, any requalification and proficiency training may be accomplished under any light level condition. UACQ-4741 requires an NSI. Initial night unaided carrier qualification shall be made under ideal weather conditions to include a visible horizon.

**Crew Requirement.** UACQ-4741: P/P/CC/AO

**Academic Training.** Aircrew should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and CNAF M-3710.7 regarding shipboard operations.

**Prerequisites.** The following events/designations are prerequisites prior to the commencement of the Carrier Qualification stage:

Academic: See MAWTS-1 Course Catalog Academic Support Package

Flight: 5 day FCLPs within 30 days prior to shipboard qualification. For night qualification, at least 2 day shipboard landings must be made on the day of the night qualification.

Designation/Qualification: CC/AG/O or AG/OUI (with an appropriate Instructor)

**UACQ-4741      1.0      365      B,R,M      N\*      A      1CH-53K**

**Goal.** Conduct night unaided CQs.

**Requirements.** Initial UACQ-4741 shall be conducted under HLL conditions.

#### Introduce/Discuss

- Standard CH-53 LHA/LHD landing pattern
- Shipboard operations brief
- TACAN and CCA approaches in IMC or night conditions
- Scan techniques for unaided shipboard operations
- Aircraft/deck lighting
- Unaided landing techniques
- Closure rate/ scan techniques
- Night unaided emergencies
- Spatial disorientation
- Night unaided CQs.

**Performance Standards.** Conduct 5 Night CQs IAW above listed items, CH-53 NATOPS and appropriate shipboard NATOPS.

**External Syllabus Support.** NS compatible helicopter capable ship or WST/APT.

**Instructor.** NSI required for the Basic (B) and Refresher (R) POI.

**Prerequisites.** NSQ HLL, NSQ LLL~LLL, FCLP-4740, and DCQ-4711

### 3.13.11 NS Carrier Qualification (Night Systems CQ)

**Purpose.** To qualify aircrew for NS shipboard operations, the term “Night Carrier Qualification” encompasses all night shipboard landing operations.

### General

Discuss and become familiar with all aspects of shipboard operations and CRM applicable to the Carrier Qualification stage as described in the appropriate NATOPS Flight Manual, NAVMC 3500.14, NWP-42, LHA/LHD NATOPS, and CNAF M-3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

5 night FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53K NATOPS, Chapter 8, Shipboard Procedures.

Initial night carrier qualification shall be made under ideal weather conditions to include a visible horizon.

Each initial or refresher instructional flight requires a minimum of 5 CQs; additional CQs as required to demonstrate proficiency.

At least 2 day shipboard landings must be made on the day of the night qualification. Initial Night Systems Carrier Qualification training shall be accomplished under High Light Level conditions. IAW the Aviation Program Manual, any requalification and proficiency training may be accomplished under any light level condition. NSCQ-4742 requires an NSI when not NS qualified in the light level event is conducted.

Crew Requirement. NSCQ-4742: P/P/CC/AG/O

Ground Academic Training. Aircrew should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and CNAF M-3710.7 regarding shipboard operations, and MAWTS-1 Course Catalog, ASP.

Prerequisites. NSQ HLL, NSQ LLL~LLL, FCLP-4740, and DCQ-4711

<b>NSCQ-4742</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M</b>	<b>NS</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce and practice NS CQs.

### Requirement

#### Introduce/ Discuss

- NS considerations for appropriate light level
- Shipboard lighting considerations
- CC/ AG/O responsibilities during NS CQs

#### Practice

- Cabin configuration/security
- NS Carrier Qualifications
- Feet wet/landing checklist
- Wind envelopes
- Aircraft lighting procedures
- Deck markings
- LSE signals
- Voice procedures/Lost communication procedures
- Shipboard landing patterns
- Shipboard holding patterns
- Shipboard instrument patterns
- Shipboard emergencies
- Air space control in the shipboard environment
- Hand and arm signals
- Parking brake procedures
- Heading and drift corrections
- Standard Terminology
- Aircraft clearance
- Identifying closure rate

Performance Standards: Conduct 5 Night CQs IAW above listed items, CH-53 NATOPS and appropriate shipboard NATOPS.

External Syllabus Support: NS compatible helicopter capable ship

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.



Prerequisite: NSQ HLL, NSQ LLL~LLL, FCLP-4740, and DCQ-4711.

### 3.13.12 Tail Gunnery (TG)

**Purpose.** To demonstrate proficiency in delivering fire on targets of opportunity using the GAU-21 Ramp Mounted Weapon System (RMWS) .50 caliber machine gun.

## General

Aircrew shall be AGQ on the GAU-21 MWPC prior to beginning the tail gunnery stage of training.

No portion of the GAU-21 AG stage shall be waived or deferred.

All aircrew employing weapons shall have the current A1-H53BE-NFM-900 with all of the interim changes incorporated, on their person.

TG-4840 certifies the aircrew as a tail gunner with the GAU-21 RMWS. Aircrew may be qualified as a tail gunner at the discretion of the Commanding Officer after completing TG-4840. If the Commanding Officer chooses to qualify the aircrew as tail gunner a qualification letter signed by the Commanding Officer shall be issued and placed in both the individual's NATOPS & APR jacket.

Aircrew may conduct night systems tail gunnery events during either HLL or LLL conditions. If events are conducted during LLL conditions aircrew shall be NSQ HLL prior to conducting events.

An AGI able to conduct training on both the GAU-21 MWPC and RMWS is required for all day tail gunnery flight events until aircrew are Tail Gunnery Qualified.

An AGI able to conduct training on both the GAU-21 MWPC and RMWS who is also a NSI is required for all night systems (NS) tail gunnery flight events until aircrew are Aerial Gunnery Qualified.

Aircrew does not lose their tail gunnery “Qualification” status due to loss of proficiency (re-fly interval) in an individual event. Aircrew must re-fly that individual event with another qualified aircrew member in order to regain proficiency in that event.

Aircrew who lose proficiency in (TG-4811 and TG-4840) automatically lose their “Qualification” status and must complete the Refresher (R) POI with the appropriately designated instructors.

A designated AGI shall only act in the capacity of an AGI when “Qualified” and proficient in tail gunnery.

Approved laser aiming devices are required to be utilized during all night systems (NS) tail gunnery flight events.

Tail Gun Qualified Crew Chiefs and Aerial Observers/Gunners on the CH-53E that are undergoing Series Conversion (S) training may be assigned to the Series Conversion (S) POI if they are designated TGQ in the CH-53E.

Crew Requirements. P/P/CC/AG/O/ AG/O

**Ground/Academic Training.** All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

**ACAD-4053      1.0      \*      B      G**

Goal. Completion of EA Training the Tail Gunner academic requirements.

Requirement. Complete all EA Training the Tail Gunner training modules.

**Performance Standard.** Per current evaluation criteria for EA Training the Tail Gunner training.

**ACAD-2055      1.0      \*      B      G**

Goal. Completion of EA GAU-21 academic requirements.

Requirement. Complete all EA GAU-21 training modules.

Performance Standard. Per current evaluation criteria for EA GAU-21 training.

**ACAD-2056      1.0      \*      B                          G**

Goal. Completion of Laser Aiming Devices academic requirements.

Requirement. Complete all Laser Aiming Devices training modules.

Performance Standard. Per current evaluation criteria for Laser Aiming Devices training

<b>TG-4800</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>(N)</b>	<b>S/A</b>	<b>1 STATIC CH-53K/MCAT</b>
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Goal. Introduce and practice pre-flight inspection, installation, removal procedures, and operating procedures for the RMWS IAW A1-H53BE-NFM-900. All procedures shall be performed with dummy rounds and no batteries installed in the LASER aiming device.

Requirement

Introduce/Discuss/Practice

- NAVAIR 11-53DA-1
- Weapon/LASER installation IAW A1-H53BE-NFM-900
- Pre-flight IAW A1-H53BE-NFM-900
- Cargo loading and unloading techniques
- Passenger loading and unloading techniques
- Aircrew restraint system/endurance vest
- Cabin Configuration/security
- Ramp level considerations
- ICS cord discipline
- Ammunition re-loading/ cans retention
- Aerial Refueling Checklist
- Aircraft mounts inspection
- RMWS inspection (Pintle, yoke, ammo cans etc.)
- Floor interface plate inspection (RMWS)
- Ramp Cables taught and serviceable

Performance Standards. Conduct pre-flight, installation, removal and re-installation of the RMWS for cargo loading IAW all applicable manuals. Demonstrate the ability to conduct normal firing operations, weapon emergencies, troubleshooting, and reloading utilizing dummy rounds.

Ordnance Requirements. 1 GAU-21 RMWS .50 caliber machine guns, approved LASER aiming device, 10 dummy rounds

External Syllabus Support. MCAT as required.

Instructor. AGI able to conduct training on the GAU-21 RMWS required for all personnel in the Basic (B) POI.

Prerequisites. ACAD-4053, AGQ

<b>TG-4810</b>	<b>1.5</b>	<b>*</b>	<b>B</b>	<b>D</b>	<b>A</b>	<b>1 CH-53K</b>
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Goal. Introduce and practice RMWS operational considerations, safety precautions, and crew coordination for conducting crew served weapons operations during the day.

Requirement

Introduce

- CC vs. AG/O responsibilities during single ship tail gunnery operations
- CRM and crew coordination during single ship tail gunnery operations
- Aiming techniques firing from the rear hemisphere
- Range considerations firing from the rear hemisphere
- Cargo loading and unloading techniques
- Passenger loading and unloading techniques
- Weapon employment from the rear hemisphere
- Associated line numbers/suggested training (NTTP)
- Sectors of fire/Fields of fire
- Reloading procedures
- Different sight picture

Target handoff from MWPC to RMWS

Practice

Cabin configuration/security  
Adherence to cooling limits  
Normal firing operations  
Weapon stoppage procedures  
Gun jam clearing procedures  
Troubleshooting  
Positive weapons control  
Muzzle awareness  
Aiming techniques  
Target hand-off  
Post flight  
Conventional Ordnance Deficiency Report (CODR)

Performance Standards. Conduct aerial gunnery operations while employing the GAU-21 RMWS IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets during single ship aircraft operations or while in the wingman position during multi ship aircraft operations. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting the target area by second burst.

Ordnance. 1 GAU-21 RMWS .50 caliber machine gun, 600 rounds .50 caliber ordnance for the RMWS, 2 GAU-21 MWPC .50 caliber machine guns, and 600 rounds .50 caliber ordnance per MWPC

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI able to conduct training on the GAU-21 RMWS required for all personnel in the Basic (B) POI.

Prerequisites. AGQ, TG-4800

**TG-4811      1.5      365      B,R,M,S      D      A      2 CH-53K**

Goal. Introduce and practice day aerial gunnery with the GAU-21 RMWS during multi-ship operations.

Requirement

Introduce/Discuss

Wingman NFAs  
Section responsibilities  
Sectors of fire  
Target hand-off within a section

Practice

Aiming techniques firing from the rear hemisphere  
Range considerations firing from the rear hemisphere  
Associated line numbers/suggested training (NTTP)  
Weapon employment from the rear hemisphere  
Passenger loading and unloading techniques  
Aerial ballistics firing in the rear hemisphere  
Cargo loading and unloading techniques  
Sectors of fire/Fields of fire  
Reloading procedures  
Different sight picture  
Cabin configuration/security  
Adherence to cooling limits  
Normal firing operations  
Weapon stoppage procedures  
Gun Jam clearing procedures  
Troubleshooting

Positive weapons control  
Muzzle awareness  
Aiming techniques  
Target hand-off  
Post flight  
Conventional Ordnance Deficiency Report (CODR)

Performance Standards. Conduct aerial gunnery while employing the GAU-21 RMWS IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets from the lead position during multi-ship aircraft operations. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting target area by second burst.

Ordnance. 1 GAU-21 RMWS .50 caliber machine gun, 600 rounds .50 caliber ordnance for the RMWS, 2 GAU-21 MWPC .50 caliber machine guns, and 600 rounds .50 caliber ordnance per MWPC.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI able to conduct training on the GAU-21 RMWS required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisites. TG-4810

**TG-4840      1.5      180      B,R,M,S      NS      A      2 CH-53K**

Goal. Introduce and practice aerial gunnery with the GAU-21 RMWS while utilizing Night Systems during multi-ship operations.

Requirement

Introduce/ Discuss

CC vs. AG/O responsibilities during NS section tail gunnery operations  
CRM and crew coordination during NS section tail gunnery operations  
Aiming techniques in a section while utilizing NS rear hemisphere  
Target identification utilizing LASER aiming device  
Effects of chaff and flares while utilizing NS  
Laser safety/employment/setup while on ramp  
RMWS scan pattern while utilizing NS  
Effects of muzzle flash utilizing NS  
Cargo loading and unloading techniques utilizing NS  
Passenger loading and unloading techniques utilizing NS  
Light discipline  
Wingman NFAs while utilizing NS  
Section responsibilities utilizing NS  
Sectors of fire utilizing NS  
Target hand-off within a section utilizing NS

Practice

Range considerations firing from the rear hemisphere  
Associated line numbers/suggested training (NTTP)  
Weapon employment from the rear hemisphere  
Aerial ballistics firing in the rear hemisphere  
Reloading procedures  
Different sight picture  
Cabin configuration/security  
Adherence to cooling limits  
Normal firing operations  
Weapon stoppage procedures  
Gun Jam clearing procedures

Troubleshooting  
Positive weapons control  
Muzzle awareness  
Aiming techniques  
Post flight  
Conventional Ordnance Deficiency Report (CODR)

Performance Standards. Conduct aerial gunnery while employing the GAU-21 RMWS while utilizing night systems during multi-ship operations IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, weapon emergencies, troubleshooting technique, and ICS procedures. Demonstrate the ability to engage multiple targets from the lead position during multi-ship aircraft operations. Aerial Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Point of aim, point of impact shall be within the following parameters: Majority of rounds impacting the target area by second burst.

Ordnance. 1 GAU-21 RMWS .50 caliber machine gun, 600 rounds .50 caliber ordnance for the RMWS, 2 GAU-21 MWPC .50 caliber machine guns, and 600 rounds .50 caliber ordnance per MWPC.

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

Instructor. AGI able to conduct training on the GAU-21 RMWS who is also a NSI required for all personnel in the Basic (B), Refresher (R), and Series Conversion (S) POI.

Prerequisites. TG-4811

**MTG-4841      1.5      \*      B      (NS)      A/S      1+ CH-53/MCAT**

Goal. Introduce and practice moving target gunnery.

Requirement

Review

TG-4810-4840

Introduce/Discuss

CC vs. AG/O responsibilities during moving target gunnery any light level  
CRM and crew coordination during moving target gunnery any light level  
Different moving target profiles  
Moving land target  
Shadow gunnery  
Towed banner  
Moving water target  
IR spotlight  
LASER aiming device as moving target  
Lead compensation

Practice

Aiming techniques in a section if applicable  
Target identification utilizing LASER aiming device  
Laser safety/employment/setup while on ramp  
RMWS/ MWPC scan pattern  
Wingman NFAs  
Section responsibilities  
Sectors of fire  
Target hand-off within a section  
Range considerations  
Associated line numbers/suggested training (NTTP)  
Aerial ballistics  
Reloading procedures  
Cabin configuration/security  
Adherence to cooling limits  
Normal firing operations

- Gun Jam clearing
- Stoppage procedures
- Troubleshooting
- Positive weapons control
- Muzzle awareness
- Aiming techniques
- Post flight
- CODRs
- Different moving target profiles

Performance Standards. Conduct aerial gunnery vs. a moving target while employing the GAU-21 RMWS during single or multi-ship operations IAW the NTTP 3-22.3-CH-53 and the A1-H53BE-NFM-900. Demonstrate positive weapons control, normal firing operations, LASER employment, weapon emergencies, troubleshooting technique, and ICS procedures. Tail Gunner Under Instruction SHALL maintain situational awareness both inside and outside of the aircraft while safely performing ammunition can change. Demonstrate the ability to engage moving targets with point of aim, point of impact within the following parameters: Majority of rounds impacting the target area by second burst.

Ordnance. 600 rds. of .50 caliber per crew member. 2 GAU-21 MWPC; 1 GAU-21 RMWS; Approved LASER aiming devices if flown at night

Range Requirements. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Aerial gunnery laser safe range with SDZ approved for .50 caliber day and night shooting. Targets should range in size from personnel targets to APC size targets. MCAT as required.

Instructor. AGI able to conduct training on the GAU-21 MWPC and on the GAU-21 RMWS as appropriate required for all personnel in the Basic (B) syllabus. NSI who is also an AGI is required if conducted at night.

Prerequisite. TG-4810~DAY, TG-4840~NS.

### 3.13.13 Tactics (TAC)

Purpose. To conduct practical application exercises using skills developed through the syllabus. These exercises will include planning, briefing, and execution of an assault support mission in a low to medium threat environment.

General. Aircrew may conduct these flights in high or low light level conditions if flown at night.

Crew Requirement. P/P/CC/AG/O

Ground/Academic Training. All self-paced readings and lectures shall be completed prior to stage initiation. Utilize academic courseware as outlined in the CH-53 MAWTS-1 Course Catalog.

<b>TAC-4940</b>	<b>2.0</b>	<b>365</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>3+ CH-53K</b>
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Goal. Develop integrated tactical flight proficiency in a low to medium threat environment within a division.

#### Requirement

##### Review

- TAC-2911
- HLL-2920 (if applicable)
- LLL-2930 (if applicable)

##### Introduce/ Discuss

- Division Tactics

##### Practice

- CC vs. AG/O responsibilities during multi-ship tactical operations
- CRM and crew coordination
- Cabin configuration/security
- Escort integration, i.e. Battle Positions
- Sectors of fire consideration for entire flight
- Section Responsibilities, i.e. free/engaged aircraft
- Operations in LZ

Performance Standards. Conduct multi-aircraft flight in a low to medium threat environment as stated in the NTTP 3-22.3-53. Demonstrate knowledge/usage of mission planning products.

Ordnance. Two .50 Caliber machine guns are required; Rounds and firing of machine guns are optional though highly encouraged.

External Syllabus Support. Escort aircraft if available; Live fire range as required

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night. WTI's should be utilized to the max extent possible.

Prerequisite. TAC-2911, HLL-2920~NS, LLL-2930~LLL.

**TAC-4941      2.0      \*      B      (NS)      A      2 CH-53K**

Goal. Develop tactical flight proficiency in urban terrain operations at night.

Requirement

Review

TAC-2911  
HLL-2920 (if applicable)  
LLL-2930 (if applicable)

Introduce /Discuss

Effects of ambient lighting on night systems in an urban area  
Obstacle clearance in urban area  
Scan techniques in urban area

Practice

Cabin configuration/security  
Escort integration, i.e. Battle Positions, attached, detached or combination  
Sectors of fire consideration for entire flight  
Section Responsibilities, i.e. free/engaged aircraft  
Operations in LZ  
Wave off lanes  
Standard terminology  
Military Operations Urban Terrain (MOUT)

Performance Standards. Demonstrate understanding of CH-53 operations in urban areas as stated in the MAWTS-1 MOUT Manual. Demonstrate knowledge/usage of mission planning products.

Ordnance. Two .50 Cal machine guns are required. Rounds and firing of machine guns are optional though highly encouraged.

Syllabus Support. Escort aircraft if available

Instructor. TERFI required for all personnel in the Basic (B) POI. NSI required if conducted at night. WTI's should be utilized to the max extent possible.

Prerequisite. HLL-2920~HLL or LLL-2930~LLL

3.14 MISSION PLUS PHASE (4000)

Purpose. To plan, brief, and execute Mission Plus events in a low to medium threat environment.

General

For initial, refresher, or when the aircrew under instruction are not proficient in a particular Mission Plus Skill, training codes shall be given by an instructor pilot or qualified crew chief instructor that is proficient in that Mission Plus Skill. Mission Plus Skill events should be given to all those aircrew (Pilots, Crew Chief, AG/O) within the aircraft that meet the prerequisite. Additionally, for larger flights, any flight lead, (SL, DL, AFL, AMC) that is proficient in that Mission Plus Skill can give the Mission Plus Skill code to all aircrew within the flight that meet the prerequisite.

It is the intent that all TACEX scenarios in the Mission Skill and Mission Plus Skill Phase be based on a minimum of one of the Mission Skills. If aircrew under instruction does not meet the prerequisite for the

Mission Skill event, they will not log the Mission Skill event. However, the instructor of the Core Skill or Core Plus Skill TACEX will log both the Core Skill or Core Plus Skill event and the Mission Skill event (EX: NSI logs a LLL-2930, CAT-3240, and RIE-4980). The PUI in the LLL syllabus logs a LLL-2930). Once aircrew have been designated NSQ-LLL, all subsequent TACEXs should be coded with the appropriate Core Skill or Core Plus Skill and Mission Skill code or Mission Plus Skill. Aircrew that are not proficient in a Core Skill or Core Plus Skill event may update both the Core Skill or Core Plus Skill and the Mission Skill or Mission Plus Skill event on the same sortie.

Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL and AGQ.

The aircrew under instruction will assist in the mission analysis, planning, briefing, execution and debriefing of each flight. Aircrew shall use the NTTP series and NATOPS as source documents for planning, briefing, execution and debriefing.

Multiple Mission Skill and Mission Plus Skill training events may be logged per sortie (e.g. CAT-3240, AD-3340, RIE-4980, SEA-4982) as long as the requirement(s) is met for each event. Mission and Mission Plus training events are intended to be flown and logged in conjunction with other T&R syllabus events.

The aircrew not eligible to receive the TAC code and the instructor will log both the TAC code and the Mission Skill and/or Mission Plus Skill event(s) that applies. Initial TAC codes shall be accomplished as a section; subsequent evolutions (when logged in conjunction with a Mission Skill or Mission Plus Skill) may be done single ship, based on the tactical scenario.

Mission Plus Skill events shall be flown with operational ASE, .50 calibers (as required for the tactical scenario) installed at a minimum (rounds and expendables optional), whenever practical.

Initial attempts to complete Mission Skills and Mission Plus Skills should be made in the aircraft, subsequent attempts may be accomplished in the simulator.

As of the signing of this manual, the current HMH Core MCTs are as follows:

MCT 1.3.4.1.1 Conduct Airborne Rapid Insertion/Extraction (RIE)

MCT 1.3.4.2.1 Provide Aviation-Delivered Ground Refueling (ADGR)

MCT 1.3.3.3.1 Aviation Operations from Expeditionary Sea-Based Sites (SEA)

Crew Requirements: P/P/CC/AG/O

#### Academic Training

Prior to commencement of each event within the Mission Plus Phase, the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

The Mission Plus Skill academic/ground training shall be completed IAW the POI requirements and prerequisites. Upon completion, the CC and AG/O to receive training shall report to the PTO or designated representative(s), who will then manually update the training code in M-SHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the format listed in Enclosure 1 of this document.

Prerequisites: The following events/designations are prerequisites prior to the commencement of the Core Plus Tactics stage:

Academic: See event description

Flight: LLL-2930, GAUAG-2843, GTR-2540, GTR-2541

Designation: CC/AG/O

Qualification: NSQ LLL, AGQ

Phase Overview. The following stages are included in the Mission Plus Phase.

MISSION PLUS PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
RAPID INSERTION/EXTRACTION (RIE)	3.15.1	3-110
AVIATION DELIVERED GROUND REFUELING (ADGR)	3.15.2	3-111
EXPEDITIONARY SEA-BASED OPERATIONS (SEA)	3.15.3	3-112



### 3.15 MISSION PLUS STAGES

#### 3.15.1 Rapid Insertion/Extraction (RIE)

**RIE-4980      2.0      365      B,R,M      (NS)      A      1+ CH-53K**

Goal. Demonstrate the ability to conduct tactical airborne rapid insertion/extraction operations in a low to medium threat environment. Helicopter Rope Suspension Techniques (HRST) provides Marines with the ability to conduct insertions and extractions where landings are impractical. Airborne rapid insertion/extraction includes methods such as rappelling, fast rope, special patrol insertion and extractions, etc. (MCWP 3-20, MCTP 3-01B, MCTP 3-20E, MCRP MCTP 3-01BA)

Requirement: Conduct a rapid insertion/extraction operation utilizing fast rope, rappelling, para ops, helocast, or special insertion and extraction techniques.

Review

TAC-2930, INT-2106, CAT-3240, Applicable HIE Code

Introduce /Discuss

Tactical airborne rapid insert/extract operations in a low to medium threat environment

Practice

CC vs. AG/O responsibilities during RIE operations

CRM and crew coordination during RIE operations

Cabin configuration/security

Look out doctrine

Performance Standard. Plan, brief and execute a tactical airborne rapid insertion/extraction mission. If an L-Hour is utilized, arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Execute an approach and hover within +/- 5' of intended altitude and within 10' of intended spot and/or fly with +/- 50' of designated altitude and +/- 5 knots of designated airspeed.

Ordinance. Two .50 caliber machine guns are required (Tail gun is optional); Rounds and firing of the machine guns are Optional though highly encouraged.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document

External Syllabus Support. HRST Master and ground safety personnel if applicable.

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night. WTI's should be utilized to the max extent possible.

Prerequisite. NSQ LLL, AGQ, GTR-2540, GTR-2541; Proficiency in HIE-4110 if helocast is utilized, HIE-4140 if SPIE, fast rope or rappelling is utilized, or HIE-4141 if para ops are utilized.

#### 3.15.2 Aviation Delivered Ground Refueling (ADG)

**ACAD-4011      1.0      \*      B      G**

Goal. Completion of EA Aviation Delivered Ground Refueling (ADGR) academic requirements.

Requirement. Complete all EA ADGR training modules.

Performance Standard. Per current evaluation criteria for EA ADGR training.

**ADGR-4981      2.0      365      B,R,M      (NS)      A      1+ CH-53K**

Goal. Demonstrate the ability to provide aviation-delivered ground refueling to combat aircraft or tactical vehicles in a low to medium threat environment. Aviation-delivered ground refueling is a method of providing fuel to aircraft and tactical ground vehicles (TGV) utilizing CH-53 aircraft in austere locations, where no other source of fuel is readily available. This method of refueling permits operation of fixed-wing and rotary-wing aircraft and TGV without the requirement to commit the significant logistical assets necessary to operate helicopter expeditionary refueling systems (HERS), or tactical airfield fuel dispensing systems (TAFDS). ADGR can also quickly resupply established forward-arming and refueling point (FARP) sites and forward-operating bases (FOB).

The capability of the CH-53 to operate as a tactical ground refueling asset enhances MAGTF operations. (NTTP 3-22.3-CH-53)

Requirement

Review

ADGR-4240

Introduce/ Discuss

ADGR in a low to medium threat environment  
Urban vs. open terrain areas  
Site/zone selection  
Security personnel/considerations/look out  
Small arms/ADA recognition  
Enemy contact  
Emergency break away (fire or enemy)

Practice

Aircrew responsibilities in a FARP  
CRM and crew coordination  
Cabin configuration  
Installation of TBFDS  
FARP operations

Performance Standard. Plan, brief and execute a TBFDS refueling evolution. Calculate accurate fuel requirements, ensure aircraft integration and FARP site security.

Ordnance. Two .50 caliber machine guns are required (Tail gun is optional). Rounds and firing of the machine guns are optional.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document

External Syllabus Support. TBFDS system, escort, MMT and/or Command and Control aircraft are optional

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night. WTI's should be utilized to the max extent possible.

Prerequisite. NSQ LLL, AGQ, ADGR-4240, GTR-2540, GTR-2541

3.15.3 Expeditionary Sea-Based Operations

<b>SEA-4982</b>	<b>2.0</b>	<b>365</b>	<b>B,R,M</b>	<b>(NS)</b>	<b>A</b>	<b>1+ CH-53K</b>
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Goal. Demonstrate the capability to operate from Expeditionary Sea based sites. Marine aviation units maintain the capability to operate from Naval shipping (amphibious platforms, carriers, etc.) in line with platform and unit capabilities. (JP 3-0, MCWP 3-20)

Requirement

Review: Applicable light level CQs

Discuss/Practice:

Deck cycles  
Cargo/troop loading considerations while in shipboard environments  
Airspace considerations

Performance Standard. Plan, brief and execute a tactical mission to or from sea based site or FCLP pad. Ensure aircrew properly plans for and demonstrate knowledge of the particulars of operating in the shipboard environment.

Ordnance. Two .50 caliber machine guns are required (Tail gun is optional). Rounds and firing of the machine guns are optional.

Range Requirement. IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support. Ship or FCLP pad as required.

Instructor. TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night. WTI's should be utilized to the max extent possible.

Prerequisite. NSQ-LLL, AGQ, GTR-2540, GTR-2541 and appropriate CQ/FCLP event.

### 3.16 INSTRUCTOR TRAINING PHASE (5000)

Purpose. This phase contains instructor workup and evaluations certification syllabus events.

General. Upon the successful completion of the check flight, the instructor will be designated in writing by the squadron commanding officer. Copies of the designation or qualification shall be placed in the APR and NATOPS.

#### Academic/Ground Training

Within the Instructor Training Phase the required academic syllabus shall be completed in accordance with this Manual and the MAWTS-1 CH-53 Course Catalog.

The Instructor Training Phase academic/ground training shall be complete IAW the POI requirements and prerequisites for the stage and IAW this manual. Upon completion, the Instructor Under Training (IUT) shall report to the EATM or designated representative(s), who will then manually update the training code in MSHARP and log the academic/ground training event in section 3, Aircrew Ground School Training of the APR, using the form found in Paragraph 3.17.2 of this document.

2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53K T&R:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53K T&R:

<https://intelshare.intelink.sgov.gov/sites/mawts1.aspx>

### 3.17 INSTRUCTOR TRAINING STAGES

#### 3.17.1 Fleet Replacement Squadron Instructor CH-53K

Purpose: To develop proficiency in instructional procedures and techniques to support CC training.

#### General:

All instructors under training flights emphasize standardization of CC procedures and techniques. The CCIUT should be capable of demonstrating all training objectives associated with Core Skill Introduction flight instruction. All flights shall be conducted with another FRSI and crew chiefs under instruction on board.

IUT events 5100 through 5107 shall be complete prior to being designated a FRSI. Upon completion of FRSI-5107 and designation by the commanding officer, the FRSI is capable of instructing all Core Skill Introduction phase events to include TERF events.

FRSI-5107 can be flown in conjunction with any Core Skill Introduction phase event.

Crew Requirement: P/P/FRSI/CCIUT.

<b>FRSI-5100</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>D</b>	<b>A</b>	<b>2 CH-53K</b>
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Goal. Demonstrate CC responsibilities and instructional techniques during day formation flight.

#### Requirement

##### Discuss:

- Parade position
- Formations
- Closure rate
- Hand and arm signals
- In-flight emergency procedures
- Standard terminology

Performance Standards. Demonstrate proper FRSI responsibilities and instructional techniques during day formation flights IAW requirements outlined in this Chapter.

<b>FRSI-5101</b>	<b>1.5</b>	<b>*</b>	<b>B,S</b>	<b>NS</b>	<b>A</b>	<b>2 CH-53K</b>
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Goal. Demonstrate CC responsibilities and instructional techniques during night formation flight.

Requirement

Discuss

Closure rate  
Aircraft lighting  
Light signals  
Lookout responsibilities  
Target fixation  
Standard terminology  
NS considerations

Performance Standards. Demonstrate proper FRSI responsibilities and instructional techniques during NS formation flights IAW requirements outlined in this Chapter.

**FRSI-5102      1.5      \*      B,S      D      A      1 CH-53K**

Goal: Demonstrate CC responsibilities and instructional techniques during CALs.

Requirement

Discuss

CALs  
CRM  
Instructional Techniques

Performance Standards. Demonstrate proper FRSI techniques and responsibilities for day CALs IAW requirements outlined in this Chapter.

Range Requirements. CAL/MAL site

**FRSI-5103      1.5      \*      B,S      NS      A      1 CH-53K**

Goal. Demonstrate FRSI responsibilities and instructional techniques during HLL NS CALs.

Requirement

Discuss

Instructional Techniques  
NS considerations  
Lighting  
CALs  
CRM

Performance Standards. Demonstrate proper FRSI techniques and responsibilities for HLL NS CALS IAW requirements outlined in this Chapter.

Range Requirements CAL/MAL site

**FRSI-5104      1.5      \*      B,S      D      A      1 CH-53K**

Goal. Demonstrate FRSI responsibilities and instructional techniques during day maneuvers and navigation while flying in the TERF environment.

Requirement

Discuss

TERF maneuvers  
Aircraft clearances  
Standard terminology  
CALs  
CRM  
Instructional Techniques

Performance Standards. Demonstrate proper FRSI techniques and responsibilities during maneuvers and navigation while flying in the TERF environment IAW requirements outlined in this Chapter.

Range Requirements. TERF maneuver area/route



External Syllabus Support. As required

3.17.2 CH-53K Instructor Designations: See Paragraph 3.14

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

3.19 REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS (RQD) STAGES (6000)

3.19.1 CH-53 NATOPS POI

Purpose. To evaluate aircrew knowledge of aircraft systems, performance limitations, emergency procedures, flight and ground operations IAW CNAF M-3710.7 and CH-53 NATOPS.

General

The evaluating CC shall be a NATOPS Evaluator, NATOPS Instructor, or Assistant NATOPS Instructor. The CC evaluator shall conduct the NATOPS evaluation in accordance with CNAF M-3710.7 series and other applicable directives, instructions, and orders.

The NATOPS Evaluator shall utilize the NATOPS Model Manager generated NATOPS Aviation Training Form (ATF) and the evaluation metrics required for the accomplishment and performance of the standardized criteria to determine whether the aircrew completed the sortie.

6100 is an annual flight requirement per CNAF M-3710.7 and the CH-53 NATOPS Manual. 6100 is the initial check ride for an AG/O to be designated.

Aircrew shall complete and have a graded open book, closed book, and oral evaluation prior to the commencement of the flight event. If a crew chief completes the NTPS 6100 in the simulator, use of both the crew chief flight simulator and CFTD are required to fully complete the check ride.

Crew Requirements: P/P/CC/AG/O (as required)

Ground Academic Training: Open, closed book and oral evaluation IAW OPNAV 3710.7 and the CH-53 NATOPS.

**NTPS-6000      3.0      365      B,R,M,S                      G      Open Book Examination**

Goal. Open book written examination to evaluate the airman's NATOPS knowledge IAW CNAF M-3710.7.

Requirement. Complete the NATOPS Open Book Examination in the allotted time per current requirements.

Performance Standard. IAW CNAF 3710.7

**NTPS-6001      1.0      365      B,R,M,S                      G      Closed Book Examination**

Goal. Closed book written examination to evaluate the airman's NATOPS knowledge IAW CNAF M-3710.7 and CH-53 NATOPS.

Requirement. Complete the NATOPS Closed Book Examination in the allotted time per current requirements.

Performance Standard. IAW CNAF M-3710.7 and CH-53 NATOPS

Prerequisites. NTPS-6000.

**NTPS-6002      2.0      365      B,R,M,S                      G      Oral Examination**

Goal. Oral examination to evaluate the airman's NATOPS knowledge IAW CNAF M-3710.7 and CH-53 NATOPS.

Requirement. Complete the NATOPS Oral Examination.

Instructor. NATOPS Instructor or Assistant NATOPS Instructor required

Performance Standard. IAW CNAF M-3710.7 and CH-53 NATOPS

Prerequisites. NTPS-6001

**NTPS-6004      1.0      30      B,R,M      G      Monthly Ep Exam**

Goal. Monthly NATOPS Emergency Procedure Examination to evaluate the airman's knowledge of Emergency Procedures.

Requirement. Complete the NATOPS Monthly EP Exam in the allotted time per current requirements.

Performance Standard. CNAF M-3710.7 and CH-53 NATOPS

Prerequisites. Shall be completed after designation as CH-53 Crew Chief or Aerial Observer.

**NTPS-6005      1.0      90      B,R,M      (NS)      A/S      1      CH-53K/MCAT**

Goal. Review Normal and Emergency Procedures. This event fulfills the NAVMC 3500.14 Aviation T&R Program Manual Chapter 2 NATOPS quarterly emergency procedure event.

Requirements

Discuss

Normal procedures  
Emergency procedures  
Operating limitations

Review

Normal procedures  
Emergency procedures  
Operating limitations

Performance Standards. Per CH-53 NATOPS

External Syllabus Support. MCAT as required

Prerequisites. Shall be completed after designation as CH-53 Crew Chief or Aerial Observer.

**NTPS-6100      1.5      365      B,R,M,S      (NS)      A/S      1 CH-53K/MCAT**

Goal. Completion of the annual NATOPS evaluation

Requirement

Discuss

Crew Brief  
Aerial Gunner Observer responsibilities  
Cabin configuration  
Weapons configuration

Demonstrate

Aircraft systems knowledge  
Preflight/Prestart/Post flight procedures  
In-flight procedures  
Emergency procedures  
CRM

Performance Standards. Demonstrate proficiency and knowledge of all flight skills and systems of the CH-53 as a CC or AG/O as applicable.

External Syllabus Support. MCAT as required for Maintain POI only.

Instructor. NATOPS Instructor or Assistant NATOPS Instructor required. NSI is required if not NS qualified in the light level event is conducted.

Prerequisites. NTPS-6002

3.19.2 CRM Training

Purpose. To conduct annual CRM training

General

(a) CRM Flight may be flown concurrent with any operational or training flight or simulator, including NTPS-6100.

(b) The CRM Flight Evaluator must be designated a CRM Facilitator or CRM Instructor.

Crew Requirements. P/P/CC/AG/O (as required)

Ground Academic Training. Annual CH-53 CRM Ground Training IAW CH-53 NATOPS, CNAF M-3710.7 and OPNAVINST 1542.7.

<b>CRM-6003</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M,S</b>	<b>*</b>	<b>G</b>	<b>CRM Class</b>
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Goal. Conduct annual CH-53 CRM ground training IAW CH-53 NATOPS, OPNAV 3710.7 and OPNAVINST 1542.7

Requirement

Discuss

- Situational awareness
- Assertiveness
- Decision making
- Communication
- Leadership
- Adaptability/Flexibility
- Mission analysis

Performance Standards. Per CH-53 NATOPS, CNAF M-3710.7 and OPNAVINST 1542.7

Instructor. CRMI or CRMF required

<b>CRM-6101</b>	<b>1.5</b>	<b>365</b>	<b>B,R,M,S</b>	<b>(NS)</b>	<b>A/S</b>	<b>1+ CH-53K/MCAT</b>
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Goal. Practice/review CRM principles presented in the CH-53 annual CRM ground training during flight evaluation.

Requirement

Discuss

- Situational awareness
- Assertiveness
- Decision making
- Communication
- Leadership
- Adaptability/Flexibility
- Mission analysis

Evaluate

- Situational awareness
- Assertiveness
- Decision making
- Communication
- Leadership
- Adaptability/Flexibility
- Mission analysis

Performance Standards. Demonstrate effective use of the 7 CRM critical skills and IAW CH-53 NATOPS, CNAF M-3710.7, OPNAVINST 1542.7.

External Syllabus Support. MCAT as required for Maintain POI only.

Instructor. CRMI or CRMF required

Prerequisite. CRM-6003



### 3.19.3 FUNCTIONAL CHECK FLIGHT

Purpose. To evaluate aircrew knowledge of aircraft systems, performance limitations, emergency procedures, flight, and ground operations IAW CNAF M-3710.7 and CH-53 NATOPS CH-53 FCF procedures.

#### General

The evaluating CC shall be a NATOPS Evaluator, NATOPS Instructor, or Assistant NATOPS Instructor. The CC evaluator shall conduct the NATOPS evaluation in accordance with CNAF M-3710.7 series and other applicable directives, instructions, and orders.

The NATOPS Evaluator shall utilize the NATOPS Model Manager generated NATOPS Aviation Training Form (ATF) and the evaluation metrics required for the accomplishment and performance of the standardized criteria to determine whether the aircrew completed the sortie.

6610 is a one-time flight requirement. At the completion of the 6610 the CC is consider qualified to conduct FCF procedures.

Crew Requirements. P/P/CC (NI/ANI as required for initial Flight codes)

**FCF-6601      1.5      \*      B      D      G      1 STATIC CH-53K**

Goal. Introduce Aircrew to the Crew Chief responsibilities during Functional Check Flight Procedures, as well as evaluate their ability to safely and efficiently conduct Functional Check Flights.

#### Requirements

##### Introduce/Discuss

Standardized FCF/QA Matrix  
Functional Ground Turn  
Pre-flight Maintenance Requirements  
In-flight FCF/Maintenance Adjustments  
Between “FCF Run” Adjustments  
Post Flight Maintenance  
FCF Preparation/Time Management  
FCF Weight & Balance Kits (MRH/TRH)  
FCF Tool/GSE Preparation  
QA Brief Prior to FCF Brief  
ADB Screening  
Maintenance Control & Work Center Coordination  
FCF Brief  
Post FCF Brief

Performance Standards. Demonstrate thorough working knowledge of above listed discussion items.

Instructor. NI/ANI

Prerequisite. Required reading: NATOPS Ch.10, NFM-700, A1-H53CE-VIB-000, A1-H53CE-580-000, 4790.2.

**FCF-6602      0.1      \*      B      G      ASM**

Goal. Verify maintenance qualification and functional items have been met in ASM.

Performance Standards. Verify completion and qualification of FCF/Vibration Analysis qualification and required CBT's.

Instructor. NI/ANI

Prerequisite. ACAD-6601

**FCF-6610      1.5      \*      B      D      A      1 CH-53K**

Goal. To conduct Functional Check Flight Crew Chief evaluation.

Requirements. FCF-6610 shall be conducted with a full profile, mechanical flight control, or engine related FCF Card.

Discuss

- Standardized FCF/QA Matrix
- Functional Ground Turn
- Pre-flight Maintenance Requirements
- In-flight FCF/Maintenance Adjustments
- Between “FCF Run” Adjustments
- Post Flight Maintenance
- FCF Preparation/Time Management
- FCF Weight & Balance Kits (MRH/TRH)
- FCF Tool/GSE Preparation
- QA Brief Prior to FCF Brief
- ADB Screening
- Maintenance Control & Work Center Coordination
- FCF Brief
- Post FCF Brief

Demonstrate

- Overall systems knowledge
- Use of IVHMS
- FCF procedures
- Time management
- Aircrew management

Performance Standard. FCFCC will be evaluated on the ability to conduct a full-systems functional check flight. The FCFCC shall be evaluated on all stages of the evolution from QA briefing through QA debriefing and MAF initiation. FCFCC will be evaluated on overall systems knowledge, FCF procedures, time management, and aircrew management. Aircraft does not have to be in 2K2/FCF status to perform evaluation.

Ground Academic Training. IAW Maintenance Ground ASM training

Instructor. NI/ANI

Prerequisite. ACAD-6601, ACAD-6602, CAL-2210

### 3.19.4 GRADUATE LEVEL COURSES

There are 5 graduate level courses that certify CCIs for tactical portions of the T&R syllabus. These courses are as follows:

Aircraft Parachute Flare Instructor (APFI) See MAWTS-1 Course Catalog

Aerial Gunnery Instructor (AGI) See MAWTS-1 Course Catalog

Terrain Flight Instructor (TERFI) See MAWTS-1 Course Catalog

Defensive Measures Instructor (DMI) See MAWTS-1 Course Catalog

Night Systems Instructor (NSI) See MAWTS-1 Course Catalog

Weapons and Tactics Instructor (WTI Secondary MOS 6177) See WTI Course Catalog

The above courses and applicable training syllabi are listed in the current MAWTS-1 Course Catalog or WTI Course Catalog. There will be no re-fly requirement for these instructor flights unless SNM is outside the flying community for longer than 366 days. T&R syllabus proficiency in stages is considered sufficient to maintain proficiency as an instructor. WTIs are only certified at the Weapons and Tactics Instructor course provided at MAWTS-1.

3.20 MISSION ESSENTIAL TASK (MET) PHASE

3.21 MISSION ESSENTIAL TASK (MET) STAGE

3.22 AVIATION CAREER PROGRESSION MODEL (ACPM) PHASE

3.23 AVIATION CAREER PROGRESSION MODEL (ACPM) STAGE

3.24 ELECTRONIC AIRCREW TRAINING FORM (EATF) REASON CODES

CH-53K EATF REASON CODES							
Reason Code Category Description	Syllabus Name	Reason	Change	Update Reason Code Category Description	Update Syllabus Name	Update Reason	Po Notes
CRM	CH-53K Pilot	Decision Making					
CRM	CH-53K Pilot	Adaptability / Flexibility					
CRM	CH-53K Pilot	Assertiveness					
CRM	CH-53K Pilot	Communication					
CRM	CH-53K Pilot	Leadership					
CRM	CH-53K Pilot	Mission Analysis					
CRM	CH-53K Pilot	Situational Awareness					
DND	CH-53K Pilot	Aircraft					
DND	CH-53K Pilot	Instructor					
DND	CH-53K Pilot	Not Required					
DND	CH-53K Pilot	Time					
DND	CH-53K Pilot	Weather					
OTHER	CH-53K Pilot	Other Resource					
Briefing/Knowledge	CH-53K Pilot	Instructor Skill/Technique					
Briefing/Knowledge	CH-53K Pilot	Limitations					
Briefing/Knowledge	CH-53K Pilot	NATOPS Brief					
Briefing/Knowledge	CH-53K Pilot	NATOPS, MDG, NTTP					
Briefing/Knowledge	CH-53K Pilot	SOPs					
Briefing/Knowledge	CH-53K Pilot	Systems					
CRM	CH-53K Pilot	Instructor Skill/Technique					
DND	CH-53K Pilot	Hotseat					
Flight Skills (PAC)	CH-53K Pilot	Airspeed Control					
Flight Skills (PAC)	CH-53K Pilot	Altitude Control					
Flight Skills (PAC)	CH-53K Pilot	Attitude Control					
Flight Skills (PAC)	CH-53K Pilot	Closure Rate					
Flight Skills (PAC)	CH-53K Pilot	Dash-2 Position Control					
Flight Skills (PAC)	CH-53K Pilot	Descent Rate					
Flight Skills (PAC)	CH-53K Pilot	Drift Control					
Flight Skills (PAC)	CH-53K Pilot	EPs					
Flight Skills (PAC)	CH-53K Pilot	Flight Control Inputs					
Flight Skills (PAC)	CH-53K Pilot	Glideslope Control					
Flight Skills (PAC)	CH-53K Pilot	Heading Control					
Flight Skills (PAC)	CH-53K Pilot	Scan					
Flight Skills (PAC)	CH-53K Pilot	Instructor Skill/Technique					
Flight Skills (PAC)	CH-53K Pilot	Radio Calls					
Flight Skills (PNAC)	CH-53K Pilot	Checklists					
Flight Skills (PNAC)	CH-53K Pilot	Cockpit Setup					
Flight Skills (PNAC)	CH-53K Pilot	Descent Rate					
Flight Skills (PNAC)	CH-53K Pilot	EPs					
Flight Skills (PNAC)	CH-53K Pilot	Instrument Crosscheck					
Flight Skills (PNAC)	CH-53K Pilot	Instructor Skill/Technique					
Mission Planning	CH-53K Pilot	Instructor Skill/Technique					
Mission Planning	CH-53K Pilot	Route Planning / Map Preparation					
Mission Planning	CH-53K Pilot	Smart Pack items					
Mission Planning	CH-53K Pilot	Weight and power calculation					
Mission Systems	CH-53K Pilot	FLIR usage					
Mission Systems	CH-53K Pilot	GPS usage					
Mission Systems	CH-53K Pilot	Instructor Skill/Technique					
Mission Systems	CH-53K Pilot	Navigation Equipment / Switchology					
Mission Systems	CH-53K Pilot	NVG usage					
Mission Systems	CH-53K Pilot	Radio Usage					

CH-53K EATF REASON CODES							
Reason Code Category Description	Syllabus Name	Reason	Change	Update Reason Code Category Description	Update Syllabus Name	Update Reason	Po Notes
CRM	CH-53K Crew Chief	Decision Making					
CRM	CH-53K Crew Chief	Adaptability / Flexibility					
CRM	CH-53K Crew Chief	Assertiveness					
CRM	CH-53K Crew Chief	Communication					
CRM	CH-53K Crew Chief	Leadership					
CRM	CH-53K Crew Chief	Mission Analysis					
CRM	CH-53K Crew Chief	Situational Awareness					
DND	CH-53K Crew Chief	Aircraft					
DND	CH-53K Crew Chief	Instructor					
DND	CH-53K Crew Chief	Not Required					
DND	CH-53K Crew Chief	Time					
DND	CH-53K Crew Chief	Weather					
OTHER	CH-53K Crew Chief	Other Resource					
Briefing	CH-53K Crew Chief	Mission Brief / Debrief					
DND	CH-53K Crew Chief	Other Resource					
DND	CH-53K Crew Chief	Student Performance					
Execution	CH-53K Crew Chief	Egress					
Execution	CH-53K Crew Chief	Landing					
Execution	CH-53K Crew Chief	Objective Area					
Execution	CH-53K Crew Chief	Shutdown					
Execution	CH-53K Crew Chief	Start-up					
Execution	CH-53K Crew Chief	Troubleshooting					
Knowledge-Equipment	CH-53K Crew Chief	Limitations					
Knowledge-Equipment	CH-53K Crew Chief	NATOPS, MDG, NTTP					
Knowledge-Equipment	CH-53K Crew Chief	SOP's, Policies, and Instructions					
Knowledge-Equipment	CH-53K Crew Chief	Systems Knowledge					
Preflight	CH-53K Crew Chief	ADB					
Preflight	CH-53K Crew Chief	Inspection					
Preflight	CH-53K Crew Chief	Servicing					
Preflight	CH-53K Crew Chief	Time Management					
Preflight	CH-53K Crew Chief	Troubleshooting					
Skills	CH-53K Crew Chief	Checklists and Flows					
Skills	CH-53K Crew Chief	Communication / Std terminology					
Skills	CH-53K Crew Chief	Depth Perception					
Skills	CH-53K Crew Chief	Drift Corrections					
Skills	CH-53K Crew Chief	EPs					
Skills	CH-53K Crew Chief	Obstacle Avoidance					
Skills	CH-53K Crew Chief	Wingman/Traffic calls					

## 3.25.1 FRS CH-53K CREW CHIEF T&amp;R MATRIX (0000, 1000, &amp; 5000 PHASE)

CH-53K CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	SERIES CONV	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT CONV	
ACADEMICS/CBT/LAB/FRSI/EVAL (ACAD)																			
ACAD	CBT	0100	(U) CH-53K HISTORY	X			1.0						G	*		0200		0100	
	CBT	0101	(U) CH-53K PUBLICATIONS	X	X		1.0						G	*		0100		0101	
	CBT	0102	(U) FAMILIARIZATION (INTERIOR)	X	X		1.0						G	*		0101		0102	
	CBT	0103	(U) FAMILIARIZATION (EXTERIOR)	X	X		1.0						G	*		0102		0103	
	CBT	0104	(U) BLADE/PYLON FOLD & SPREAD	X	X		1.0						G	*		0103		0104	
	CBT	0105	(U) EMERGENCY PROCEDURES	X	X		1.0						G	*		0103		0105	
	CBT	0106	(U) TAXI/TAKEOFF/IN-FLIGHT CHECKS & PROCEDURES	X	X		1.0						G	*		0103		0106	
	CBT	0107	(U) INTERNAL CARGO HANDLING	X	X		1.0						G	*		0103		0107	
	CBT	0108	(U) INTRO TO THE MULTIFUNCTIONAL DISPLAY SYSTEM (MFD)	X	X		1.0						G	*		0103		0108	
	CBT	0109	(U) WEIGHT & BALANCE	X	X		1.0						G	*		0103		0109	
	CBT	0110	(U) INTRO TO THE IVHMS	X	X		1.0						G	*		0103		0110	
	LECT	0200	(U) INTRODUCTION TO THE COURSE	X			2.0						G	*			CHECK-IN	0200	
	LECT	0201	(U) SAFETY PROCEDURES	X			1.5						G	*		0103		0201	
	LECT	0202	(U) GROUND HANDLING PROCEDURES	X			1.5						G	*		0103		0202	
	LECT	0203	(U) DAILY INSPECTION (INTERIOR)	X	X		1.0						G	*		0201,0202		0203	
	LECT	0204	(U) DAILY INSPECTION (E-BAYS)	X	X		1.5						G	*		0201,0202		0204	
	LECT	0205	(U) DAILY INSPECTION (LANDING GEAR)	X	X		1.0						G	*		0201,0202		0205	
	LECT	0206	(U) DAILY INSPECTION (REFUEL PANEL, FUSELAGE & SPONSON)	X	X		1.5						G	*		0201,0202		0206	
	LECT	0207	(U) DAILY INSPECTION (ENG/NGB, AND EAPPS)	X	X		1.5						G	*		0201,0202		0207	
	LECT	0208	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON/OBIGGS)	X	X		1.5						G	*		0201,0202		0208	
	LECT	0209	(U) DAILY INSPECTION (TDS & DISCONNECT)	X	X		1.0						G	*		0201,0202		0209	
	LECT	0210	(U) DAILY INSPECTION (TL SKID/IGB/PYLONG/STABILIZER/ROPO/ACTUATOR)	X	X		1.5						G	*		0201,0202		0210	
	LECT	0211	(U) DAILY INSPECTION (TBG/TRH/TRB)	X	X		1.0						G	*		0201,0202		0211	
	LECT	0212	(U) DAILY INSPECTION (MGB & PRIMARY SERVOS)	X	X		1.5						G	*		0201,0202		0212	
	LECT	0213	(U) DAILY INSPECTION (1 <sup>ST</sup> , 2 <sup>ND</sup> , & UTILITY HYD)	X	X		1.5						G	*		0201,0202		0213	
	LECT	0214	(U) DAILY INSPECTION (APU & ECS COMPARTMENTS)	X	X		1.5						G	*		0201,0202		0214	
	LECT	0215	(U) DAILY INSPECTION (MRB & MRH)	X	X		1.0						G	*		0201,0202		0215	
	LECT	0216	(U) DAILY INSPECTION (MISSION SYSTEMS)	X	X		1.0						G	*		0201,0202,		0216	
	LECT	0217	(U) TURNAROUND INSPECTION	X	X		1.0						G	*		0201,0202		0217	
	LECT	0218	(U) APU START	X	X		1.0						G	*		0201,0202,0104		0218	
LECT	0219	(U) PLANE CAPTAIN RESPONSIBILITIES	X			2.5						G	*		0202,0105		0219		
LECT	0220	(U) EGRESS PROCEDURES	X			1.0						G	*				0220		
LECT	0221	(U) PREFLIGHT/PRESTART/POSTFLIGHT RESPONSIBILITES	X	X		3.0						G	*		0201,0108		0221		
LECT	0222	(U) AIRCREW RESPONSIBILITIES	X			3.5						G	*		0201,0106		0222		
LECT	0223	(U) GENERAL FLIGHT INFORMATION	X			1.0						G	*		1104		0223		
LECT	0224	(U) EXTERNALS	X	X		1.0						G	*		0201		0224		
LECT	0225	(U) TERRAIN FLIGHT (TERF)	X			1.0						G	*				0225		
LECT	0226	(U) FORMATION FLIGHT	X			1.0						G	*				0226		

CH-53K CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	SERIES CONV	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT	CONV
	LAB	0300	(U) GROUND HANDLING PROCEDURES	X	X		2.5						G	*	*	0201,0202		0300	
	LAB	0301	(U) DAILY INSPECTION (INTERIOR)	X	X		2.5						G	*	*	0203		0301	
	LAB	0302	(U) DAILY INSPECTION (E-BAYS)	X	X		1.5						G	*	*	0204		0302	
	LAB	0303	(U) DAILY INSPECTION (LANDING GEAR)	X	X		1.5						G	*	*	0205		0303	
	LAB	0304	(U) DAILY INSPECTION (REFUEL PANEL, FUSELAGE & SPONSON)	X	X		1.0						G	*	*	0206		0304	
	LAB	0305	(U) DAILY INSPECTION (ENG/NGB, AND EAPPS)	X	X		2.0						G	*	*	0207		0305	
	LAB	0306	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON/OBIGGS)	X	X		1.5						G	*	*	0208		0306	
	LAB	0307	(U) DAILY INSPECTION (TDS & DISCONNECT)	X	X		1.0						G	*	*	0209		0307	
	LAB	0308	(U) DAILY INSPECTION (TL SKID/IGB/PYLONG/STABILIZER/ROPO/ACTUATOR)	X	X		1.5						G	*	*	0210		0308	
	LAB	0309	(U) DAILY INSPECTION (TBG/TRH/TRB)	X	X		1.5						G	*	*	0211		0309	
	LAB	0310	(U) DAILY INSPECTION (MGB & PRIMARY SERVOS)	X	X		1.5						G	*	*	0212		0310	
	LAB	0311	(U) DAILY INSPECTION (1 <sup>ST</sup> , 2 <sup>ND</sup> , & UTILITY HYD)	X	X		1.5						G	*	*	0213		0311	
	LAB	0312	(U) DAILY INSPECTION (APU & ECS COMPARTMENTS)	X	X		1.5						G	*	*	0214		0312	
	LAB	0313	(U) DAILY INSPECTION (MRB & MRH)	X	X		1.5						G	*	*	0215		0313	
	LAB	0314	(U) DAILY INSPECTION (MISSION SYSTEMS)	X	X		1.5						G	*	*	0216		0314	
	LAB	0315	(U) TURNAROUND INSPECTION	X	X		1.5						G	*	*	0217		0315	
	LAB	0316	(U) PASSENGER EMBARKATION/DEBARKATION	X			1.5						G	*	*	0107		0316	
	LAB	0317	(U) INTERNAL CARGO LOADING: WAREHOUSE PALLETS	X	X		4.0						G	*	*	0107,0108,0109		0317	
	LAB	0318	(U) INTERNAL CARGO LOADING: 463L PALLETS	X	X		4.0						G	*	*	0107,0108,0109		0318	
	LAB	0319	(U) INTERNAL CARGO LOADING: NON-PALLETIZED CARGO & ROLLING STOCK	X	X		4.0						G	*	*	0107,0108,0109		0319	
	LAB	0320	(U) BLADE & PYLON FOLD/SPREAD	X	X		4.0						G	*	*	0104,0300		0320	
	LAB	0321	(U) PREFLIGHT/POSTFLIGHT	X	X		4.0						G	*	*	0201,0221		0321	
	LAB	0322	(U) APU START	X	X		1.0						G	*	*	0218		0322	
	LAB	0323	(U) PRE START	X	X		1.5						G	*	*	0201,0221,0321,0322		0323	
	LAB	0324	(U) EGRESS PROCEDURES	X	X		1.5						G	*	*	0220		0324	
	FRSI	0500	(U) COMPUTER AIDED INST	X			2.0						G	*	*			0500	
	FRSI	0501	(U) LAB PERIOD OF INST	X			2.0						G	*	*	0500		0501	
	FRSI	0502	(U) INSTRUCTIONAL SKILLS	X			2.0						G	*	*	0501		0502	
	FRSI	0503	(U) PERIOD OF INSTRUCTION	X			2.0						G	*	*	0502		0503	
ACAD TOTAL						68	109.0	0	0.0	0	0.0								

CH-53K CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																				
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	SERIES CONV	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT	CONV	
FAMILIARIZATION (FAM)																				
FAM	SFAM	1100	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X					1.5			D	S	1	*	0222,6003				
	FAM	1101	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	D	A	1	*	1100			1100	
	FAM	1102	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	D	A	1	*	1101			1101	
	FAM	1103	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	D	A	1	*	1102			1102	
	FAM	1104	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	D	A	1	*	1103			1103	
	FAM	1105	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X	X						1.5	D	A	1	*	1104			1104	
	FAM	1106	GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	D	A	1	*	1105				
	SNFAM	1200	NIGHT SYSTEMS GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X						1.5			NS	S	1	*	1600, NITE Lab			1200
	NFAM	1201	NIGHT SYSTEMS GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	NS	A	1	*	1200		NITE LAB	1200	
	NFAM	1202	NIGHT SYSTEMS GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	NS	A	1	*	1201			1201	
NFAM	1203	NIGHT SYSTEMS GENERAL AIRCREW DUTIESAND FAMILIARIZATION	X							1.5	NS	A	1	*	1202					
FAM TOTAL						0	0.0	2	3.0	9	12.0									
FORMATION (FORM)																				
FORM	SFORM	1500	FORMATION FLIGHT	X					1.5			D	S	2	*	ACAD 0226			1500	
	FORM	1501	FORMATION FLIGHT	X							2.0	D	A	2	*	1500			1500	
	FORM	1502	NIGHT FORMATION FLIGHT	X							2.0	NS	A	2	*	1201,1501			1501	
FORM TOTAL						0	0.0	1	1.5	2	4.0									
CONFINED AREA LANDINGS (CAL)																				
CAL	SCAL	1600	CONFINED AREA LANDING	X					1.5			D	S	1	*	1104			1600	
	CAL	1601	CONFINED AREA LANDING	X	X						1.5	D	A	1	*	1600			1600	
	CAL	1602	SECTION CONFINED AREA LANDING	X							1.5	D	A	2	*	1601			1601	
	CAL	1603	NIGHT SYSTEMS (CAL)	X	X						1.5	NS	A	1	*	1201,1601			1602	
	CAL	1604	SECTION NIGHT SYSTEMS (CAL)	X							1.5	NS	A	2	*	1603			1603	
CAL TOTAL						0	0.0	1	1.5	4	6.0									
EXTERNAL (EXT)																				
EXT	SEXT	1700	SINGLE-POINT EXTERNAL	X					1.5			D	S		*	1100			1700	
	SEXT	1701	DUAL-POINT EXTERNAL	X					1.5			D	S		*	1700			1701	
	EXT	1702	SINGLE-POINT EXTERNAL	X	X						1.5	D	A	1	*	1600, 1701			1702	
	EXT	1703	DUAL-POINT EXTERNAL	X	X						1.5	D	A	1	*	1702			1703	
	EXT	1704	(NS) SINGLE-POINT EXTERNAL	X							1.5	NS	A	1	*	1602, 1703			1704	
	EXT	1705	(NS) DUAL-POINT EXTERNAL	X	X						1.5	NS	A	1	*	1704			1705	
	SEXT	1706	INDEPENDENT/TRIPLE HOOK EXTERNAL	X					1.5				D	S		*	1701			1706
EXT TOTAL						0	0.0	3	4.5	4	6.0									
TERRAIN FLIGHT (TERF)																				
TERF	STERF	1800	INTRO TERF	X					1.5			D	S	1	*	1600			1801	
	TERF	1801	INTRO TERF	X	X						1.5	D	A	1	*	1600			1801	
TERF TOTAL						0	0.0	1	1.5	1	1.5									

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CH-53K CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	SERIES CONV	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT CONV	
CORE INTRODUCTION REVIEW (REV)																			
REV	SREV	1900	STAN CHECK REV	X					1.5			(NS)	A	1	*	ALL 1000 FLTS		1900	
	REV	1901	STAN CHECK REV	X	X						2.0	(NS)	A	1	*	ALL 1000 FLTS		1900	
REV TOTAL							0	0.0	1	1.5	1	2.0							
CORE INTRODUCTION CHECK (CSIX)																			
CSIX	CSIX	1902	STAN CHECK	X	X						1.5	(NS)	A	1	*	1900		1901	
CSIX TOTAL							0	0.0	0	0.0	1	1.5							
CORE INTRODUCTION TOTAL							68	109.0	9	13.5	22	33							
CORE INTRODUCTION INSTRUCTOR TRAINING (5000 PHASE)																			
FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI)																			
FRSI	FRSI	5100	DAY FORM	X	X						1.5		D	A	2	*		5100	
	FRSI	5101	NIGHT FORM	X	X						1.5	NS	A	2	*			5101	
	FRSI	5102	DAY CAL	X	X						1.5		D	A	1	*		5102	
	FRSI	5103	NIGHT CAL	X	X						1.5	NS	A	1	*			5103	
	FRSI	5104	DAY TERF	X	X						1.5		D	A	1	*		5104	
	FRSI	5105	DAY EXT	X	X						1.5		D	A	1	*		5105	
	FRSI	5106	NIGHT EXT	X	X						1.5	NS	A	1	*			5106	
FRSI	5107	STANDARDIZATION CHECK	X	X						1.5	(NS)	A	1	*	5100-5106		5107		
FRSI TOTAL							0	0.0	0	0.0	8	12.0							
NIGHT SYSTEMS FAM INSTRUCTOR (NSFI)																			
NSFI	NSFI	5600	HLL FAM	X							1.5	NS	A	1	*	SEE MAWTS-1 CC		5600	
	NSFI	5601	HLL FORM/SECTION CALS	X							1.5	NS	A	2	*	SEE MAWTS-1 CC		5601	
	NSFI	5602	HLL EXT	X							1.5	NS	A	1	*	SEE MAWTS-1 CC		5602	
NSFI TOTAL							0	0.0	0	0.0	3	4.5							



## 3.25.2 CH-53K CREW CHIEF ATTAIN AND MAINTAIN MATRIX (2000-8000 PHASE)

CH-53K CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
CORE PHASE (2000)									
INTERNAL LOADS (INT)									
INT	ACAD	CH53 CARGO OPERATIONS	2003				*		
	ACAD	TACR	2050				*		
	INT	CARGO LAB	2100				*	2050, 2052~N	
	INT	PAX LAB	2101				*	2050, 2052~N	
	INT	(463L) CARGO LOADING SIM	2102		2102		*		
	INT	CARGO	2105	2105		2105	365	2050, 2052~N, 2100	
	INT	PAX	2106	2106		2106	*	2050, 2052~N, 2101	
	INT	(463L) CARGO LOADING	2107	2107	2107	2107	*	2050, 2052~N, 2102	
FORMATION (FORM)									
FORM	FORM	DAY FORM	2110	2110	2110	2110	180	2050	
CONFINED AREA LANDING (CAL)									
CAL	CAL	CALS	2210				*	2050	
	CAL	SECTION CALS	2211	2211	2211	2211	365	2110, 2210	2110
TERRAIN FLIGHT (TERF)									
TERF	ACAD	EA TERF	2051				*		
	TERF	TERF	2310				*	2050, 2051	
	TERF	SECTION TERF	2311	2311	2311	2311	365	2110, 2310	2110, 2310
EXTERNAL (EXT)									
EXT	SEXT	EXTERNAL SIM	2400	2400		2400	485		
	EXT	SINGLE POINT	2410				*	2210	2210
	EXT	DUAL POINT	2411	2411	2411	2411	365	2210	2210, 2410
	EXT	HLL SINGLE POINT	2420				*	2220, 2410	2210, 2220, 2410
	EXT	HLL DUAL POINT	2421	2421		2421	180	2220, 2411	2210, 2220, 2410, 2411, 2420
	EXT	LLL EXTERNALS	2430	2430	2430	2430	180	2230, 2420, 2421, NSQ-HLL	2210, 2220, 2230, 2410, 2411, 2420, 2421

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CH-53K CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
GROUND THREAT REACTION (GTR)									
GTR	ACAD	APR-39	2580				*		
	ACAD	AAR/ALE 47	2581				*		
	ACAD	AAQ-24	2582				*		
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
AERIAL GUNNERY GAU-21 (AG)									
AG	ACAD	FUNDAG	2053				*		
	ACAD	EA GAU-21	2055				*		
	ACAD	EA LASER AIMING	2056				*		
	AG	GAU-21 LAB	2800				*	2055	
	AG	GAU-21 MWPC LAB	2801		2801		*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802				*	2801	
	AG	DAY AG	2812				*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813	2813	2813	365	2311,2812	2812
	AG	NIGHT AG	2842				*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842~NS
TACTICS (TAC)									
TAC	ACAD	EA ESCORT OPS	2058				*		
	TAC	DAY LOW THREAT	2910				*	2058,2211,TERFQ	2106,2110,2210,2211
	TAC	DAY MED THREAT	2911	2911		2911	365	2910	2106,2110,2210,2211,2910
NIGHT SYSTEMS HIGH LIGHT LEVEL (HLL)									
HLL	ACAD	EA NS TRAINING	2052				*		
	HLL	HLL FORM	2120	2120		2120	365	2052,2110	2110
	HLL	HLL CALS	2220				*	2052,2210	2210
	HLL	HLL SEC CALS	2221	2221	2221	2221	180	2120,2211,2220	2110,2120,2210,2211,2220
	HLL	HLL TERF	2320				*	2052,2310,2120	2110,2120,2310
	HLL	HLL SEC TERF	2321	2321	2321	2321	180	2120,2311,2320	2110,2120,2310,2311,2320
	HLL	HLL LOW THREAT	2920	2920		2920	365	2221,2321,2910	2105,2106,2110,2120,2210,2211,2220,2221,2910

CH-53K CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
NIGHT SYSTEMS LOW LIGHT LEVEL (LLL)									
LLL	LLL	LLL CALS	2230				*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	2321	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL TERF	2330				*	NSQ HLL	2310,2320
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
MISSION PHASE (3000)									
COMBAT ASSAULT TRANSPORT (CAT)									
CAT	ACAD	NEO EXECUTION	3082				*		
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	NEO EXECUTION	3082						
	CAT	CBT ASLT TRNSPT	3240	3240		3240	365	NSQ LLL,AGQ,2540,2541, ACAD-3082	
AERIAL DELIVERY (AD)									
AD	EXT	LLL EXTERNALS	2430	2430	2430	2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	AD	AERIAL DELVIERY	3340	3340		3340	365	NSQ LLL,AGQ,2430,2540	

CH-53K CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)									
TRAP	ACAD	PERSONNEL RECOVERY	3084				*		
	ACAD	CH-53 TRAP TTPS	3085				*		
	EXT	LLL EXTERNALS	2430	2430	2430	2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	PERSONNEL RECOVERY	3084				*		
	ACAD	CH-53 TRAP TTPS	3085				*		
	TRAP	TRAP	3440	3440		3440	365	NSQ LLL,AGQ,3084,3085,2540	
AERIAL EVACUATION (AE)									
AE	ACAD	CASEVAC	3086				*		
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	(U) CASEVAC	3086				*		
	AE	AERIAL EVACUATION	3540	3540		3540	365	NSQ LLL,AGQ,3086,2540	
CORE PLUS PHASE (4000)									
HELICOPTER INSERTION & EXTRACTION (HIE)									
HIE	HIE	HELOCAST	4110	4110		4110	485	TERFQ,2106	2106
	HIE	FASTROPE/RAPPEL	4140	4140			*	2210,2920~NS,2930~LLL	2106
	HIE	PARA/OPS	4141	4141			*	2920~NS,2930~LLL	2106
	HIE	CARGO PARA/OPS	4142	4142			*	2920~NS,2930~LLL	2105,2106
AVIATION DELIVERED GROUND REFUELING (ADGR)									
ADGR	ACAD	EA ADGR	4011				*		
	ADGR	AVIATION DELIVERED GROUND REFUELING	4240	4240		4240	365	2105,2210,2920~HLL,2930~LLL,4011	2105, 2210
BATTLEFIELD ILLUMINATION (BI)									
BI	ACAD	EA BATTLEFIELD ILLUM	4054				*		
	BI	BATTLEFIELD ILLUM	4340	4340		4340	1095	NSQ-LLL,AGQ	2105, 2220~HLL, 2230~LLL

CH-53K CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)										
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING	
EXTERNALS (EXT)										
EXT	EXT	TERF EXTERNALS	4440	4440		4440	485	2310,2410~SINGLE POINT,2411~DUAL POINT 2320~HLL,2420~HLL,2330~LLL,2430~LLL,	2310,2410~SINGLE POINT,2411~DUAL POINT,2420~HLL SINGLE POINT,2421~HLL DUAL POINT, 2430~LLL	
	EXT	INDEPENDENT HOOK EXT	4441				*	2410~SINGLE POINT,2411~DUAL POINT		
	EXT	NS INDEPENDENT HOOK EXT	4442	4442		4442	365	2410~SINGLE POINT,2411~DUAL POINT 2320~HLL,2420~HLL,2330~LLL,2430~LLL	4441	
DEFENSIVE MEASURES (DM)										
DM	ACAD	EA DM/GTR PART 1	4051				*			
	ACAD	EA DM/GTR PART 2	4052				*			
	DM	RW DM	4510	4510		4510	365	TERFQ,2581,2582,4051,4052	2110,2310,2311	
	DM	FW DM	4511	4511		4511	365	TERFQ,2581,2582,4051,4052	2110,2310,2311	
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)										
CBRN	CBRN	CBRN	4600	4600		4600	1095	2210,2220~NS,2230~LLL		
FIELD CARRIER LANDING PRACTICE (FCLP)										
FCLP	SFCLP	FCLP SIM	4700				*		2210	
	FCLP	DAY FCLP	4710	4710		4710	365	2210	2210	
	FCLP	NS FCLP	4740	4740		4740	365	2220~NS,2230~LLL,4710	2210,HLL~2220,LLL~2230,4710	
CARRIER QUALIFICATION (CQ)										
CQ	DCQ	DAY CQ	4711	4711		4711	365	4710	2210,4710	
	UACQ	UNAIDED CQ	4741	4741		4741	365	4711		
	NSCQ	NIGHT CQ	4742	4742		4742	365	4740,NSQ-HLL,NSQ-LLL~LLL	HLL~2220,LLL~2230,4710,4740,4711	
TAIL GUNNERY (TG)										
TG	ACAD	EA TRAINING THE TG	4053				*			
	ACAD	EA GAU-21	2055				*			
	ACAD	LASER AIMING DEVICES	2056				*			
	TG	STATIC TG TRAINING	4800				*	AGQ,4053		
	TG	DAY TG	4810				*	AGQ,4800	2812	
	TG	DAY SECTION TG	4811	4811	4811	4811	365	4810	2812,2813	
	TG	NIGHT SECTION TG	4840	4840	4840	4840	180	4811	2812,2813,2842,2843,4810,4811	
	MTG	MTG	4841				*	2812~D,2842~NS,4810~D,4840~NS	2812,2813~SEC,2842,2843~NS SEC,4810~TG,4811~SEC TG,4840~NS TG	
TACTICS (TAC)										
TAC	TAC	DIV TAC	4940	4940		4940	365	2911,2920~HLL,2930~LLL	2110,2210,2211,2910,2911	
	TAC	URBAN TAC	4941	4941		4941	*	2920~HLL,2930~LLL	2110,2120,2210,2211,2220~HLL,2221~HLL,2910,2911,2920 ~HLL,2230~LLL,2231~LLL,2930~LLL	

CH-53K CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
RAPID INSERT/EXTRACTION (RIE)									
RIE	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	RIE	RIE	4980	4980		4980	365	NSQ LLL,AGQ	
AVIATION DELIVERED GROUND REFUELING (ADGR)									
ADGR	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	ADGR	TBFDS OPERATION	4240	4240			365	2105,2210,2920~NS,2930~LLL,4011,4200	2105,2210
	ADGR	ADGR TACTICS	4981	4981		4981	365	NSQ LLL,AGQ,4240	4240
EXPEDITIONARY SEA BASED OPERATIONS (SEA)									
SEA	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	SEA	SEA BASED	4982	4982		4982	365	NSQ LLL,AGQ,	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) PHASE [6000]									
NATOPS (NTPS)									
NTPS	NTPS	OPEN BOOK EXAM	6000	6000	6000	6000	365		
	NTPS	CLOSED BOOK EXAM	6001	6001	6001	6001	365	6000	
	NTPS	ORAL EXAM	6002	6002	6002	6002	365	6001	
	NTPS	MONTHLY EP QUIZ	6004	6004		6004	30	6100,6101	
	NTPS	QUARTERLY EP EVAL	6005	6005		6005	90	6100,6101	
	NTPS	NATOPS EVAL FLT	6100	6100	6100	6100	365	6002	
CRM									
CRM	CRM	CRM GRND CLASS	6003	6003	6003	6003	365		
	CRM	CRM FLT	6101	6101	6101	6101	365	6003	
FCF									
FCF	FCF	FCF INTRO	6601				*		
	FCF	FCF ASM VERIFY	6602				*		
	FCF	FCF FLIGHT	6610	6610		6610	1095	6601,6602	

## 3.25.3 CH-53K CREW CHIEF T&amp;R MATRIX (2000-6000 Phase)

CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
CORE PHASE (2000)																			
INTERNAL LOADS (INT)																			
INT	ACAD	2003	(U) CH53 CARGO OPERATIONS	X					1.0						G		*		2003
	ACAD	2050	(U) EA TAC AIRCREW CON																
	INT	2100	CARGO LAB	X					1.5					(N)	G		*		2100
	INT	2101	PAX LAB	X					1.5					(N)	G		*		2101
	INT	2102	(463L) CARGO LOADING SIM	X		X			1.5					(N)	G		*		2102
	INT	2105	CARGO	X	X		X						1.5	(NS)	A	1	365		2105
	INT	2106	PAX	X	X		X						1.5	(NS)	A	1	*		2106
	INT	2107	463L CARGO LOADING	X		X			1.5				0	(NS)	G	1	*		2107
INT TOTAL								5	7.0	0	0.0	2	3.0						
FORMATION (FORM)																			
FORM	FORM	2110	DAY FORM	X	X	X	X						1.5	D	A	2	180		2110
FORM TOTAL								0	0.0	0	0.0	1	1.5						
CONFINED AREA LANDING (CAL)																			
CAL	CAL	2210	CALS	X									1.5	D	A/S	1	*		2210
	CAL	2211	SECTION CALS	X	X	X	X						1.5	D	A	2	365		2211
CAL TOTAL								0	0.0	0	0.0	2	3.0						
TERRAIN FLIGHT (TERF)																			
TERF	ACAD	2051	TERF	X					1.0						G		*		2051
	TERF	2310	TERF	X									1.5	D	A/S	1	*		2310
	TERF	2311	SECTION TERF	X	X	X	X						1.5	D	A	2	365		2311
TERF TOTAL								1	1.0	0	0.0	2	3.0						
EXTERNAL (EXT)																			
EXT	SEXT	2400	EXTERNAL SIM	X	X		X						2.0	(NS)	S/A	1	485		2400
	EXT	2410	SINGLE POINT	X									1.5	D	A	1	*		2410
	EXT	2411	DUAL POINT	X	X	X	X						1.5	D	A	1	365		2411
	EXT	2420	HLL SINGLE POINT	X									1.5	HLL	A	1	*		2420
	EXT	2421	HLL DUAL POINT	X	X		X						1.5	HLL	A	1	180		2421
	EXT	2430	LLL EXTERNALS	X	X	X	X						1.5	LLL	A	1	180		2430
EXT TOTAL								0	0.0	0	0.0	5	9.5						
GROUND THREAT REACTION (GTR)																			
GTR	ACAD	2580	APR-39	X					1.0						G		*		
	ACAD	2581	AAR/ALE-47	X					1.0						G		*		2581
	ACAD	2582	AAQ-24	X					1.0						G		*		2582
	ACAD	4050	BASIC PRINCIPLES OF EW	X					1.0						G		*		4050
	ACAD	4051	DM/GTR I	X					1.0				1.5		G		*		4051
	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
GTR TOTAL								5	5.0	0	0.0	1	4.5						

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CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
AERIAL GUNNERY GAU-21 (AG)																			
AG	ACAD	2053	FUNDAMENTALS OF AERIAL GUNNERY	X					1.0						G		*		2053
	ACAD	2055	EA GAU-21	X					1.0						G		*		2055
	ACAD	2056	LASER AIMING DEVICES	X					1.0						G		*		2056
	AG	2800	GAU-21 LAB	X					3.0					D	G		*		N/A
	AG	2801	GAU-21 MWPC LAB	X		X			2.0					D	G		*		N/A
	AG	2802	WEAPON PROCEDURES LAB	X					2.0					D	G		*		N/A
	AG	2812	DAY AG	X									1.5	D	A	1	*		2812
	AG	2813	DAY SEC AG	X	X	X	X						1.5	D	A	2+	365		2813
	AG	2842	NIGHT AG	X									1.5	NS	A	1	*		2842
AG	2843	NIGHT SEC AG	X	X	X	X						1.5	NS	A	2+	180		2843	
AG TOTAL								6	10.0	0	0.0	4	6.0						
TACTICS (TAC)																			
TAC	ACAD	2058	(U) EA ESCORT OPERATIONS	X					1.0								*		
	TAC	2910	DAY LOW THREAT	X									2.0	D	A	2	*		2910
	TAC	2911	DAY MED THREAT	X	X		X						2.0	D	A	2	365		2911
TOTAL TAC STAGE								1	1.0	0	0.0	2	4.0						
NIGHT SYSTEM HIGH HIGH LEVEL (HLL)																			
HLL	ACAD	2052	EA NIGHT VISION TRAINING	X					1.0						G		*		2052
	HLL	2120	HLL FORM	X	X		X						1.5	HLL	A	2	365		2120
	HLL	2220	HLL CALS	X									1.5	HLL	A	1	*		2220
	HLL	2221	HLL SEC CALS	X	X	X	X						1.5	HLL	A	2	180		2221
	HLL	2320	HLL TERF	X									1.5	HLL	A	1	*		2320
	HLL	2321	HLL SEC TERF	X	X	X	X						1.5	HLL	A	2	180		2321
	HLL	2920	HLL LOW THREAT	X	X		X						2.0	HLL	A	2	365		2920
TOTAL NS HLL STAGE								0	1.0	0	0.0	6	9.5						
NIGHT SYSTEM LOW HIGH LEVEL (LLL)																			
LLL	LLL	2230	LLL CALS	X									1.5	LLL	A	1	*		2230
	LLL	2231	LLL SEC CALS	X	X	X	X						1.5	LLL	A	2	180		2231
	LLL	2330	LLL TERF	X									1.5	LLL	A	1	*		2330
	LLL	2331	LLL SEC TERF	X	X	X	X						1.5	LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X						2.0	LLL	A	2+	365		2930
TOTAL NS LLL STAGE								0	0.0	0	0.0	5	8.0						
CORE PHASE TOTAL								18	25.0	2	0.0	32	50.0						



CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
MISSION PHASE (3000)																			
COMBAT ASSAULT TRANSPORT (CAT)																			
CAT	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	ACAD	3082	NEO EXECUTION	X					0.8						G		*		3082
CAT	3240	CMBT ASSAULT TRANSPORT	X	X		X						2.0	(NS)	A	2+	365		3240	
AT TOTAL								1	0.8	0	0.0	1	2.0						
AERIAL DELIVERY (AD)																			
AD	EXT	2430	LLL EXTERNALS	X	X	X	X							LLL	A	1	180		2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
AD	3340	AERIAL DELVIERY	X	X		X						2.0	(NS)	A	2+	365		3340	
AD TOTAL								0	0.0	0	0.0	1	2.0						
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)																			
TRAP	EXT	2430	LLL EXTERNALS	X	X	X	X							LLL	A	1	180		2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	ACAD	3084	(S) PERSONNEL RECOVERY	X					1.0						G		*		3084
	ACAD	3085	(S) CH53 SPECIFIC TRAP TTPS	X					0.8						G		*		3085
TRAP	3440	TRAP	X	X		X						2.0	(NS)	A	2+	365		3440	
TRAP TOTAL								2	1.8	0	0.0	1	2.0						
AERIAL EVACUATION (AE)																			
AE	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	ACAD	3086	(U) CASEVAC	X					0.5						G		*		3086
AE	3540	AERIAL EVACUATION	X	X		X						2.0	(NS)	A	2+	365		3540	
AE TOTAL								1	0.5	0	0.0	1	2.0						
TOTAL MISSION PHASE								4	3.1	0	0.0	5	10.0						

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CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
CORE PLUS PHASE (4000)																			
HELICOPTER INSERTION & EXTRACTION (HIE)																			
HIE	HIE	4110	HELOCAST	X	X		X						1.5	D	A	1	485		4110
	HIE	4140	FASTROPE/RAPPEL	X									1.5	(NS)	A	1	*		4140
	HIE	4141	PARA/OPS	X									1.5	(NS)	A	1	*		4141
	HIE	4142	CARGO PARA-OPS	X									1.5	(NS)	A	1	*		4142
HIE TOTAL								0	0.0	0	0.0	4	6.0						
AVIATION DELIVERED GROUND REFUELING (ADGR)																			
ADGR	ACAD	4011	EA ADGR	X					1.0						G		*		4011
	ADGR	4240	TBFDS OPERATION	X	X		X		1.5					(NS)	G	1	365		4200
ADGR TOTAL								2	2.5	0	0.0	0	0						
BATTLEFIELD ILLUMINATION (BI)																			
BI	ACAD	4054	EA BATTLEFIELD ILLUMINATION	X					1.0						G		*		4054
	BI	4340	BATTLEFIELD ILLUMINATION	X	X		X						1.5	NS	A	1	1095		4340
BI TOTAL								1	1.0	0	0.0	1	1.5						
EXTERNALS (EXT)																			
EXT	TERF EXT	4440	NS TERF EXTERNALS	X	X		X						1.5	(NS)	A	1+	485		4440
	EXT	4441	INDEPENDENT HOOK EXTERNALS	X									1.5	D	A	1	*		
	EXT	4442	NS INDEPENDENT HOOK EXTERNALS	X	X		X						1.5	NS	A	1	365		
EXT TOTAL								0	0.0	0	0.0	2	3.0						
DEFENSIVE MEASURES (DM)																			
DM	ACAD	4051	CH-53 DM/GTR 1	X					1.0						G		*		
	ACAD	4052	CH-53 DM/GTR 2	X					1.0						G		*		
	DM	4510	RW DM	X	X		X						1.5	D	A	2	365		4510
	DM	4511	FW DM	X	X		X						1.5	D	A	2	365		4511
DM TOTAL								2	2.0	0	0.0	2	3.0						
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)																			
CBRN	CBRN	4600	CBRN	X	X		X		1.5					(NS)	G		1095		4600
CBRN TOTAL								1	1.5	0		0	0.0						
FIELD CARRIER LANDING PRACTICE (FCLP)																			
FCLP	SFCLP	4700	SIM FCLP	X							1.0			D	S		*		4700
	FCLP	4710	DAY FCLP	X	X		X						1.5	D	A	1	365		2710
	FCLP	4740	NS FCLP	X	X		X						1.5	NS	A	1	365		2742
FCLP TOTAL								0	0.0	1	1.0	2	3.0						
CARRIER QUALIFICATION (CQ)																			
CQ	DCQ	4711	DAY CQ	X	X		X						1.5	D	A	1	365		4711
	UACQ	4741	UNAIDED CQ	X	X		X						1.5	N*	A	1	365		4740
	NSCQ	4742	NIGHT CQ	X	X		X						1.5	NS	A	1	365		4743
CQ TOTAL								0	0.0	0	0.0	3	4.5						

CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
TAIL GUNNERY (TG)																			
TG	ACAD	4053	EA TRAINING THE TAIL GUNNER	X					1.0						G		*		4053
	ACAD	2055	EA GAU-21	X					1.0						G		*		2055
	ACAD	2056	EA LASER AIMING DEVICES	X					1.0						G		*		2056
	TG	4800	STATIC TG TRAINING	X					1.5					(N)	S/A	1	*		4800
	TG	4810	DAY TG	X									1.5	D	A	1	*		4810
	TG	4811	DAY SECTION TG	X	X	X	X						1.5	D	A	2	365		4811
	TG	4840	NIGHT SECTION TG	X	X	X	X						1.5	NS	A	2	180		4840
	MTG	4841	MOVING TARGET GUNNERY	X									1.5	(NS)	A/S	1+	*		4841
TG TOTAL								4	4.5	0	0.0	4	6.0						
TACTICS (TAC)																			
TAC	TAC	4940	DIV TAC	X	X		X						2.0	(NS)	A	3+	365		4940
	TAC	4941	URBAN TAC	X									2.0	(NS)	A	2+	*		4941
TAC TOTAL								0	0.0	0	0.0	2	4.0						
RAPID INSERTION/EXTRACTION (RIE)																			
RIE	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180		2843
	RIE	4980	RIE	X	X		X						2.0	(NS)	A	1+	365		4980
RIE TOTAL								0	0.0	0	0.0	4	6.5						
ADGR																			
ADGR	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180		2843
	ADGR	4240	TBFDS OPERATION	X	X		X						1.5	(NS)	A	1	365		4200
	ADGR	4981	ADGR TACTICS	X	X		X						2.0	(NS)	A	1+	365		4981
ADGR TOTAL								0	0.0	0	0.0	5	8.0						
EXPEDITIONARY SEA BASED (SEA)																			
SEA	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180		2843
	SEA	4982	SEA BASED	X	X		X						2.0	(NS)	A	1+	365		4982
SEA TOTAL								0	0.0	0	0.0	4	6.5						

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CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
INSTRUCTOR TRAINING PHASE (5000)																			
APFI																			
APFI	APFI	5300	APFI STATIC	X									1.5	(NS)	G	1	*		5300
	APFI	5301	APFI EXECUTION	X									1.5	NS	A	1	*		5301
APFI TOTAL								0	0.0	0	0.0	2	3.0						
AIR-TO-GROUND INSTRUCTOR																			
AGI	AGI	5400	AGI STATIC TRAINING	X					3.0					D	G	1	*		N/A
	AGI	5401	AGI STATIC TRAINING	X					1.0					D	G	1	*		N/A
	AGI	5402	AGI STATIC TRAINING	X					3.0					D	G	1	*		N/A
	AGI	5403	MTG	X									1.5	(NS)	A	1+	*		5403
	AGI	5404	NS SEC AG	X									1.5	NS	A	2	*		N/A
	AGI	5405	DAY SEC TG	X									1.5	(NS)	A	2	*		5405
	AGI	5406	NS SEC TG	X									1.5	NS	A	2	*		5406
	AGI	5407	NS SEC AG	X									1.5	NS	A	2	*		N/A
AGI	5408	NS SEC TG	X									1.5	NS	A	2	*		N/A	
AGI TOTAL								3	7.0	0	0.0	6	9.0						
TERRAIN FLIGHT INSTRUCTOR (TERFI)																			
TERFI	TERFI	5700	DAY TERF/NAV/EXT	X									2.0	D	A	1	*		5700
	TERFI	5701	NS SECTION TERF/NAV	X									2.0	NS	A	2	*		5701
TERFI TOTAL								0	0.0	0	0.0	2	4.0						
DEFENSIVE MEASURES INSTRUCTOR (DMI)																			
DMI	DMI	5800	2 V GRND THREAT	X									1.5	(NS)	A	2	*		5800
	DMI	5801	2 V FW/RW	X									1.5	D	A	2	*		5801
	DMI	5802	2 V FW/RW	X									2.0	D	A	2	*		5802
DMI TOTAL								0	0.0	0	0.0	3	5.0						

CH-53K CREW CHIEF T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
NIGHT SYSTEMS INSTRUCTOR (NSI)																			
NSI	NSI	5900	NS FAM/CAL/EXT	X									1.5	NS	A	1	*		5900
	NSI	5901	NS SEC CALS/TERF	X									1.5	NS	A	2	*		5901
	NSI	5902	NS SEC CALS/TERF/EXT/TAC	X									3.0	NS	A	2	*		5902
NSI TOTAL								0	0.0	0	0.0	3	6.0						
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RCQD)																			
NATOPS (NTPS)																			
NTPS	NTPS	6000	OPEN BOOK EXAM	X	X	X	X		3.0						G		365	X	6000
	NTPS	6001	CLOSED BOOK EXAM	X	X	X	X		1.0						G		365	X	6001
	NTPS	6002	ORAL EXAM	X	X	X	X		2.0						G		365	X	6002
	NTPS	6004	MONTHLY EP QUIZ	X	X	X	X		1.0						G		30	X	6004
	NTPS	6005	QUARTERLY EP EVALUATION	X	X	X	X		1.0						A/S		90	X	6005
	NTPS	6100	NATOPS EVALUATION FLIGHT	X	X	X	X						1.5	(NS)	A/S	1	365	X	6100
NTPS TOTAL								5	8.0	0	0.0	1	1.5						
CRM																			
CRM	CRM	6003	CRM GRND CLASS	X	X	X	X		1.5						G		365	X	6003
	CRM	6101	CRM FLT	X	X	X	X						1.5	(NS)	A/S	1	365	X	6101
CRM TOTAL								1	1.5	0	0.0	1	1.5						
FCF																			
FCF	FCF	6601	INTRO FCF PROCEDURES	X					1.5					D	G		*		
	FCF	6602	VERIFY ASM QUALS	X					.5					D	G	1	*		
	FCF	6610	FCF EVALUATION FLIGHT	X	X		X						1.5	D	A	1	1095		6610
FCF TOTALS								2	2.0	0	0.0	1	1.5						

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3.26.1 AIRCREW PERFORMANCE RECORD/ QUALIFICATION JACKET ACEDMIC TRACKER (0000-4000)

ENLISTED AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER				
SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	FRS ACADEMIC PHASE (0000)	DD/MM/YY	NAME OR SELF PACED	NAME
CBT-0100	(U) CH-53 HISTORY			
CBT-0101	(U) CH-53K PUBLICATIONS			
CBT-0102	(U) FAMILIARIZATION (INTERIOR)			
CBT-0103	(U) FAMILIARIZATION (EXTERIOR)			
CBT-0104	(U) APP OPERATION			
CBT-0105	(U) BLADE/PYLON FOLD SPREAD			
CBT-0106	(U) EMERGENCY PROCEDURES			
CBT-0107	(U) TAXI / TAKEOFF / IN-FLIGHT CHECKS & PROCEDURES			
CBT-0108	(U) INTERNAL CARGO HANDLING			
CBT-0109	(U) SINGLE AND DUAL POINT EXTERNAL LIFT			
CBT-0110	(U) BEARING MONITOR SYSTEM			
CBT-0111	(U) INTRO TO THE IMDS			
CBT-0112	(U) INTRO TO THE IMDS FLIGHT SYSTEMS			
ACAD-0200	(U) INTRODUCTION TO THE COURSE			
ACAD-0201	(U) SAFETY PROCEDURES			
ACAD-0202	(U) GROUND HANDLING PROCEDURES			
ACAD-0203	(U) DAILY INSPECTION (INTERIOR)			
ACAD-0204	(U) DAILY INSPECTION (ELECTRONICS-BAYS)			
ACAD-0205	(U) DAILY INSPECTION (LANDING GEAR)			
ACAD-0206	(U) DAILY INSPECTION (REFUEL PANEL/AUX TANKS/FUSELAGE & SPONSONS)			
ACAD-0207	(U) DAILY INSPECTION (ENG/NGB & EAPS)			
ACAD-0208	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON)			
ACAD-0209	(U) DAILY INSPECTION (TDS & DISCONNECT)			
ACAD-0210	(U) DAILY INSPECTION (TAIL SKID/IGB/TGB/PYLON/STABILIZER & TAIL ROTOR SERVO)			
ACAD-0211	(U) DAILY INSPECTION (TRB & TRH)			
ACAD-0212	(U) DAILY INSPECTION (MGB/PRIMARY SERVO & FLIGHT CONTROLS)			
ACAD-0213	(U) DAILY INSPECTION (2 <sup>ND</sup> STAGE/UTILITY & ENG START HYDRAULIC SYSTEMS)			
ACAD-0214	(U) DAILY INSPECTION (AGB/APP COMPARTMENT)			
ACAD-0215	(U) DAILY INSPECTION (MRB & MRH)			
ACAD-0216	(U) DAILY INSPECTION (MISSION SYSTEMS)			

ENLISTED AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER				
SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	FRS ACADEMIC PHASE (0000)	DD/MM/YY	NAME OR SELF PACED	NAME
ACAD-0217	(U) TURNAROUND INSPECTION			
ACAD-0218	(U) APP START			
ACAD-0219	(U) BLADE & PYLON FOLD/SPREAD			
ACAD-0220	(U) PLANE CAPTAIN RESPONSIBILITIES			
ACAD-0221	(U) EGRESS PROCEDURES			
ACAD-0222	(U) AIRCREW RESPONSIBILITIES			
ACAD-0223	(U) CRM			
ACAD-0224	(U) EXTERNAL TRANSPORTATION			
ACAD-0225	(U) TERRAIN FLIGHT MANUVERS			

ENLISTED AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER				
SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	FRS ACADEMIC PHASE (0000)	DD/MM/YY	NAME OR SELF PACED	NAME
LAB-0300	(U) GROUND HANDLING PROCEDURES			
LAB-0301	(U) DAILY INSPECTION (INTERIOR)			
LAB-0302	(U) DAILY INSPECTION (ELECTRONICS-BAYS)			
LAB-0303	(U) DAILY INSPECTION (LANDING GEAR)			
LAB-0304	(U) DAILY INSPECTION (REFUEL PANEL/AUX TANKS/FUSELAGE & SPONSONS)			
LAB-0305	(U) DAILY INSPECTION (ENG/NGB & EAPS)			
LAB-0306	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON)			
LAB-0307	(U) DAILY INSPECTION (TDS & DISCONNECT)			
LAB-0308	(U) DAILY INSPECTION (TAIL SKID/IGB/TGB/PYLON/STABILIZER & TAIL ROTOR SERVO)			

LAB-0309	(U) DAILY INSPECTION (TRB & TRH)			
LAB-0310	(U) DAILY INSPECTION (MGB/PRIMARY SERVO & FLIGHT CONTROLS)			
LAB-0311	(U) DAILY INSPECTION (2 <sup>ND</sup> STAGE/UTILITY & ENG START HYDRAULIC SYSTEMS)			
LAB-0312	(U) DAILY INSPECTION (AGB/APP COMPARTMENT)			
LAB-0313	(U) DAILY INSPECTION (MRB & MRH)			
LAB-0314	(U) DAILY INSPECTION (MISSION SYSTEMS)			
LAB-0315	(U) TURNAROUND INSPECTION			
LAB-0316	(U) APP START			
LAB-0317	(U) DAILY INSPECTION			
LAB-0318	(U) EGRESS PROCEDURES			
LAB-0319	(U) CARGO LAODING PROCEDURES			
INST-0500	(U) COMPUTER AIDED INSTRUCTION			
INST-0501	(U) LAB PERIOD OF INSTRUCTION			
INST-0502	(U) INSTRUCTIONAL SKILLS			
INST-0503	(U) PERIOD OF INSTRUCTION			
EVAL-0600	(U) PLANE CAPTAIN DUTIES			
EVAL-0601	(U) PLANE CAPTAIN DUTIES REVIEW			



### 3.26.2 FRS ADDITIONAL ACADEMICS TRACKER

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3.26.3 ACADEMICS TRACKER FOR 2000 THROUGH 4000 PHASE.

<b>AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER</b>				
<b>SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING</b>				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	CORE SKILL PHASE (2000)	DD/MM/YY	NAME OR SELF PACED	NAME
ACAD-2003	(U) CH-53 Internal Cargo Operations			
ACAD-2581	(S) AAR/ALE 47			
ACAD-2580	(S) APR-39			
ACAD-2582	(S) AAQ-24			
ACAD-2050	(U) EA Tactical Aircrew Considerations and Responsibilities			
ACAD-2051	(U) EA Terrain Flight			
ACAD-2052	(U) EA Night Vision Training			
ACAD-2053	(U) EA Fundamentals of Aerial Gunnery			
ACAD-2055	(U) EA GAU-21			
ACAD-2056	(U) EA Laser Aiming Devices			
ACAD-2058	(U) EA Basic Principles of Escort Operations			
<b>MISSION SKILL PHASE (3000)</b>				
ACAD-3082	(U) NEO Execution			
ACAD-3084	(S) Personnel Recovery			
ACAD-3085	(S) CH53 Specific TRAP TTPS			
ACAD-3086	(U) CASEVAC			
<b>CORE PLUS SKILL PHASE (4000)</b>				
ACAD-4011	(U) EA Aviation Delivered Ground Refueling TBFDS (CH-53K)			
ACAD-4050	(U) EA Basic principles of Electronic Warfare			
ACAD-4051	(U) EA Defensive Measures I			
ACAD-4052	(U) EA Defensive Measures II (CH-53)			
ACAD-4053	(U) EA Training the Tail Gunner			
ACAD-4054	(U) EA Battlefield Illumination			

### 3.26.4 ADDITIONAL ACADEMICS TRACKER FOR 2000 PHASE THROUGH 8000 PHASE.

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CHAPTER 4  
CH-53K AERIAL GUNNER/ OBSERVER  
(MOS 6199)

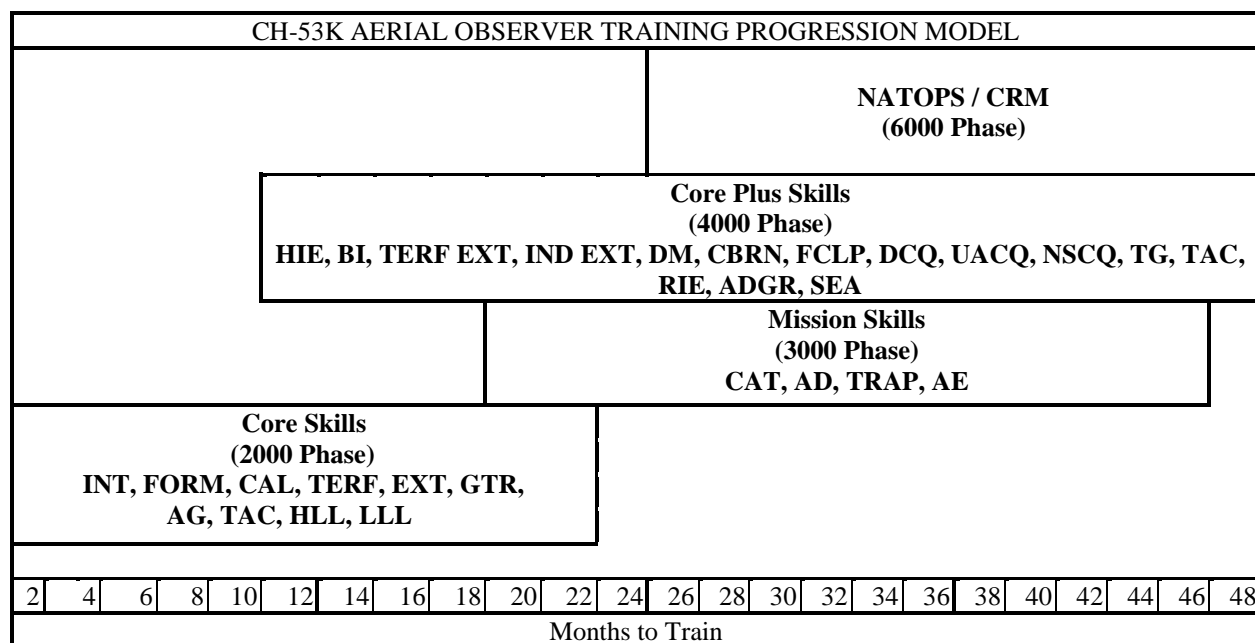
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# CH-53K AERIAL OBSERVER (MOS 6199)

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

4.1 AERIAL GUNNER/OBSERVER (6199) TRAINING PROGRESSION MODEL. This model represents the recommended training progression for the average Aerial Gunner/Observer (6199) crewmember. Units should use the model as a point of departure to generate individual training plans.



4.2 AG/O PROGRAMS OF INSTRUCTION (POI). These tables reflect the average time-to-train versus the minimum to maximum time-to-train parameters in the Training Progression Model.

## Program of Instruction (POI) Assignment

4.2.1 Basic, Conversion, and Transition POI: AG/Os assigned to Basic (B), Conversion (C), and Transition (T) POIs shall fly the entire Basic (B) POI.

4.2.2 Basic POI

CH-53K AG/O Basic POI		
Weeks	Phase of Instruction	Unit
88	Core Skill Training	Tactical Squadron
88	Mission Skill Training	Tactical Squadron

4.2.3 Refresher POI

CH-53K AG/O Refresher POI		
Weeks	Phase of Instruction	Unit
12	Core Skill Training	Tactical Squadron
26	Mission Skill Training	Tactical Squadron

4.2.4 Refresher POI. The Refresher (R) POI is predicated on the experience of the Refresher AG/O. Previously designated AG/Os returning to a flying status after being in a non-flying status for a period of 366 days or longer shall be assigned to the Refresher (R) POI and fly all (R) coded events. The squadron Commanding Officer my

tailor the individual's Refresher POI per the squadron standardization board recommendations and IAW NAVMC 3500.14 Chapter 2. When the (R) coded events within a stage of training are complete, the AG/O may be credited with the entire stage of training. This assumes the AG/O has previous proficiency in a stage of training. If the AG/O has no previous proficiency in a stage or particular event (i.e. event Never Been Attempted (NBA)), then the Refresher AG/O shall fly the entire stage or all events not previously attempted.

All Refresher (R) events shall require an ATF filled out and signed by the Crew Chief instructor for that event. All ATFs shall be annotated with an (R) after the event code to annotate a refresher event.

#### 4.2.5 Series Conversion POI

CH-53K AG/O Series Conversion POI		
Weeks	Phase of Instruction	Unit
12	Core Skill Training	Tactical Squadron

4.2.6 Series Conversion POI. The series conversion POI is prescribed for personnel converting from CH-53E to CH-53K. All current CH-53E AG/Os are required to fly the annotated core skill series conversion events at a tactical squadron with a qualified CH-53K instructor. AG/Os assigned to the series conversion syllabus may complete a NATOPS evaluation and be designated a CH-53K AG/O at the completion of the following event stages: INT, FORM, CAL, TERF, EXT, TAC, HLL, Taxi-Turn Up, and APU. Upon completion of the NATOPS evaluation, AG/Os will continue the series conversion syllabus with the remaining 2000-4000 level events annotated with (S).

#### 4.2.7 Program of Instruction (POI) Assignment

PROGRAM ON INSTRUCTION MATRIX		
Program of Instruction (POI)	Symbol	Aviation Flying
Basic	B	Initial MOS/Skill Training
Transition*	T	Moving from one Type to another (Tilt-Rotor to Rotary-Wing)e.g. MV-22 to CH-53
Conversion*	C	Moving from one Model to another (CH-46 to CH-53)
Refresher	R	Non-flying status for 366 days or longer
Maintain	M	All individual who have attained CSP/MSP/CPD by initial POI assignment are re-assigned to the M POI to maintain proficiency.
*Transition and Conversion Aerial Observers shall be assigned to the Basic POI.		

### 4.3 PROFICIENCY & CURRENCY

4.3.1 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.

4.3.2 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 demonstrations. 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, and FAC(A)).

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

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

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

4.3.3 **Skill Currency.** Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill and applies to all MOS’s that must comply with NATOPS and OPNAV requirements. It is a measure of time since the last event demanding that specific skill. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for aircrew individual type mission profiles can be found in NAVMC 3500.14D Chapter 3.

4.4 **QUALIFICATION, AND DESIGNATION TABLES:** The tables below delineate T&R events required to be proficient or waived to attain Requirements, Certifications, Qualifications and Designations. In addition to event requirements, all required stage lectures, briefs; squadron training, prerequisites, and other criteria shall be completed prior to completing final events. Certifications, qualification and designation letters signed by the Squadron Commanding Officer shall be placed in section 4 of the Aircrew Performance Records and NATOPS. Loss of proficiency in any qualification event causes the associated qualification to be lost. Regaining a qualification requires completing delinquent R-coded events associated with that qualification. Waiving of all Required Events leading to a Requirement, Certification, Qualification, or Designation, is not allowed.

CH-53K CREW CHIEF/ AG/O REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)	
Qualification	INDIVIDUAL QUALIFICATION REQUIREMENTS
	Event Requirements
TERF	2310, 2311
NSQ HLL	2120, 2220, 2221, 2320, 2321, 2920
NSQ LLL	2230, 2231, 2330, 2331, 2930
BI	4340
DAY CQ	4711
UNAIDED CQ	4741
NIGHT CQ	4742
AG	2800, 2801, 2802, 2812, 2813, 2842, 2843
DM	4510, 4511
TG	4800, 4810, 4811, 4840
NATOPS	6000,6001,6002,6100
CRM	6003,6101
*	AG/Os are not required to conduct CQs before being designated, however if attached to a MEU squadrons may include FCLPs and CQs in order to train new AG/Os
INDIVIDUAL DESIGNATION REQUIREMENTS	
Designation	Event Requirements
AG/O CH-53K	2100, 2101, 2102, 2105, 2106,2107, 2110, 2120, 2210, 2211, 2220, 2221, 2310, 2311, 2320, 2321, 2400 2411, 2421, 2812, 2813, 2842, 2843, 2910, 6000, 6001, 6002, 6003, 6100, 6101. Designation Letter from CO.

#### 4.5 SYLLABUS NOTES

4.5.1 **AIRCREW TRAINING REFERENCES.** Aircrew shall use the following references to ensure safe and standardized training procedures, grading criteria, and aircraft operation.

AIRCREW TRAINING REFERENCES	
Designator	Title
CNAF M-3710.7	NATOPS General Flight and Operating Instructions
A1-H53XX-NFM-000	CH-53K NATOPS Flight manual
NAVMC 3500.14	Aviation Training and Readiness (T&R) Program manual
MCO 4790.20	Individual training standards
MCRP 4-11.3E	Multiservice helicopter sling load manual
NTTP 3-22.3-53	CH-53 Air Naval Tactics Techniques and Procedures
NTTP 3-22.5-ASTACSOP	USMC Assault Support Tactical SOP
NTTP 3-22.5-CH-53	CH-53 Tactical Pocket Guide



NVD Manual	USN/USMC Helicopter Night Vision Device
A1-H53XX-CLG-000	CH-53K Cargo loading manual
TM HM-020-800-23&P-M	Tactical Bulk Fuel Delivery System
TM HM-020-800-10	TBFDS Operators Manual
NTRP 3-22.4 CH53E, Appendix H	TBFDS Checklist
EA Academic Support Package	MAWTS-1 Course Catalog
EA Instructor Support Package	MAWTS-1 Course Catalog
NTTP 3-22.3-53 Appendix B	Ground Threat Training
NTTP 3-22.3-53 Appendix A	Defensive Measures Training
NTRP 3-22.4	Naval Aviation Technical Information

4.5.2 General. This Manual is written to allow for local conditions and yet remain unclassified. DC AVN and CG MCCDC encourage squadrons to use the full range of tactics in the tactical manuals and adopt the latest developed and proven tactics. All events shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques. Aircrew shall fly events annotated with an N at least 30 minutes after official sunset. Aircrew shall fly night events in accordance with the table of acronyms for environmental conditions.

#### 4.5.3 Acronyms for crew requirements

Acronyms for Crew Requirements	
Acronym	Definition
AG/O	Aerial Gunner / Observer
AG/OUI	Aerial Gunner Observer Under Instruction

#### 4.5.4 Environmental Conditions Matrix

Environmental Conditions	
Code	Meaning
D	Shall be flown daytime
N	Shall be flown at night, may be aided or unaided.
N*	Shall be flown at night, must be flown unaided.
(N*)	May be flown at night – If flown at night, must be flown unaided.
(N)	May be flown at night – If flown at night; may be flown aided or unaided.
NS	Shall be flown at night – Mandatory use of Night Vision Devices.
(NS)	May be flown at night – If flown at night; must be flown with Night Vision Devices.
Note – Aircrew shall fly all night time events at least 30 minutes after official sunset.	
Note – If the event is to be flown in the simulator the Instructor shall set the desired environmental conditions for the event.	

#### 4.5.5 Event Terms

EVENT TERMS	
TERM	DESCRIPTION
Discuss	An explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge or procedures.
Demonstrate	The description and performance of a particular maneuver/event by the instructor, observed by the student. The student is responsible for knowledge of the procedures prior to the demonstration of a required maneuver.
Introduce	The instructor may demonstrate a procedure or maneuver to a student, or may coach the student through the maneuver without demonstration. The student performs the procedures or maneuver with coaching as necessary. The student is responsible for knowledge of the procedures.
Practice	The performance of a maneuver or procedure by the student that may have been previously introduced in order to attain a specified level of performance.
Review	Demonstrated proficiency of a maneuver by the student.
Evaluate	Any flight designed to evaluate aircrew standardization that does not fit another category.

#### 4.5.6 Programs of Instruction Matrix

PROGRAM ON INSTRUCTION MATRIX		
Program of Instruction (POI)	Symbol	Aviation Flying
Basic	B	Initial MOS/Skill Training
Refresher	R	Non-flying status for 366 days or longer
Maintain	M	All individual who have attained CSP/MSP/CPD by initial POI assignment are re-assigned to the M POI to maintain proficiency.
Note -Transition and Conversion Aerial Observers/Gunners shall be assigned to the Basic POI.		

4.5.7 Re-Qualification (TERFO, AGO, DCQ, NSCQ, UACQ, NSQ HLL, NSQ LLL, TGQ, DMO, BIO). Upon demonstration of proficiency, by flying those (R) coded events, IAW the Program Manual NAVMC 3500.14D, within the applicable stage in a specific core skill, aircrew may be re-qualified at the discretion of the Squadron Commanding Officer.

#### 4.5.8 Aviation Training Forms (ATF)

All initial Basic (B), Conversion (C), and Transition (T) POI events shall require an ATF. The ATF shall be filled out and signed by the Crew Chief Instructor as outlined by the instructor requirement per the individual T&R event. All ATFs shall have the NAVFLIR number logged and be marked either “SATISFACTORY” or “UNSATISFACTORY”.

All initial Refresher (R) POI events shall require an ATF. The ATF shall be filled out and signed by the Crew Chief Instructor as outlined by the instructor requirement per the individual T&R event. All Refresher ATFs shall be annotated with a (R) after the T&R event code to annotate that the event was a refresher. All ATFs shall have the NAVFLIR number logged and be marked either “SATISFACTORY” or “UNSATISFACTORY”.

All POI events deemed to be “UNSATISFACTORY” shall require an ATF. The ATF shall be filled out and signed by the Crew Chief Instructor as outlined by the instructor requirement per the individual T&R event. These events shall not be logged on the NAVFLIR for the individual nor shall they receive credit for conducting these events.

All individual instructors shall report to the Enlisted Aircrew Training Manager (EATM) within a 24 hour period and provide them with the completed ATFs for the event. The EATM shall ensure that all ATFs are properly logged in the individual’s APR within 48 hours after the event has been completed.

All ATFs shall be logged in section 3 of the individual’s APR jacket under the T&R Evaluated Flights tab. The standardized ATF’s are logged via MSHARP and may be printed and placed in the APR.

The ATFs shall be logged in order according to the “T&R Syllabus Matrix” with the highest numbered T&R code place on top. All Refresher ATFs shall be logged in the same manner except that they shall all be grouped together and placed on the top of the other ATFs and have the refresher syllabus letter signed by the Squadron Commanding Officer placed on top. All “UNSATISFACTORY” ATFs shall be logged in the same order and shall remain the individuals APR jacket. The T&R Syllabus Matrix shall be placed in section 3 of the APR and placed on top of the T&R Evaluated Flights Tab. The syllabus matrix is located in the same folder as the standardized ATF.

#### 4.5.9 Designation as an Aerial Gunner/Observer.

The Aerial Observer/Aerial Observer Under Instruction (AO/AOUI) is an assistant to the AG/O. Their crew position is associated with the left window in the A/C cabin. It is highly encouraged to train the AO/AOUI to the same standards as an AG/O but at no time will their training take precedence over that of a AG/O. The following is a list of the general responsibilities that the AO shall assist the AG/O in. This list is not all inclusive.

- a. Pre-flight inspections/maintenance of A/C.
- b. A/C preparation.
- c. Cabin setup/configuration for mission.
- d. Cabin security.
- e. A/C startup/shutdown.
- f. On/Off load of passenger/cargo.
- g. Security of passengers/cargo.
- h. Obstacle clearance of left side and tail rotor of A/C.
- i. Post-flight inspections/maintenance of A/C.

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An individual desiring to become an Aerial Observer (AG/O) shall be nominated by the squadrons Enlisted Aircrew Training Manager (EATM) to the squadrons Standardization (STAN) board. If the STAN board concurs with the nomination their recommendation will be forwarded to the squadrons Commanding Officer for approval. If approved by the Commanding Officer the individual shall be annotated on the authorized to fly list and begin the AG/O syllabus.

Once approved by the Commanding Officer the individual will become an Aerial Gunner/Observer Under Instruction (AG/OUI) until they are designated as an Aerial Gunner/ Observer (AG/O). The AG/OUI will not conduct any of the Core Skill Introduction phase and will begin training in the Core Skill phase. The AG/OUI shall complete all academic and flight training as appropriate per the T&R Program of Instruction (POI).

Prior to the first flight the individual shall complete the aviation physical examination, Naval Aviation Survival Training (NTSP), and NITE lab indoctrination training per OPNAVIST 3710.7 Ch.8.

The AG/OUI shall complete the following T&R events per the Individual Designation table prior to beginning any other stage or phase of training: 2100, 2101, 2102, 2105, 2106, 2107, 2110, 2120, 2210, 2211, 2220, 2221, 2310, 2311, 2320, 2321, 2400, 2411, 2421, 2812, 2813, 2842, 2843, 2910, 6000, 6001, 6002, 6003, 6100, 6101. AG/OUI are not required to conduct FCLPs or CQs prior to being Designated by the Commanding Officer as an AG/O, however if a squadron intends to make a new AG/O while attached to a MEU, FCLPs and CQs may be added to the syllabus in order to train AG/Os.

The AG/OUI shall conduct all above T&R events under the supervision of the appropriate level Crew Chief Instructor per the T&R event.

In addition to the Crew Chief Instructor and the AG/OUI there shall be another designated aircrew member on board the aircraft in order to fulfill the crew requirement. The additional crew member maybe another designated Crew Chief or a designated AG/O. The designated crew member does not need to be qualified for the specific event but shall meet all prerequisites and be eligible to conduct training in the event.

The AG/OUI shall conduct all events in the AG/OUI syllabus in the appropriate order per the required prerequisites of the individual T&R events. All events shall be logged appropriately in M-SHARP. All events shall require an ATF filled out and signed by the Crew Chief Instructor for that event and logged in the AG/OUIs APR jacket.

The AG/OUI shall not complete the 6000 phase events until all other events in the AG/OUI syllabus have been completed. The 6000 phase of training shall be instructed and evaluated by a NATOPS Instructor or Assistant NATOPS Instructor and a Crew Resource Management Instructor or Facilitator as appropriate per the event.

The AG/OUI shall not fly any event outside of the AG/OUI syllabus and act in the capacity of an AG/O nor fulfill the crew requirement for that event. If the AG/OUI is scheduled in addition to a qualified crew for any event outside the AG/OUI syllabus the AG/OUI shall not act in the capacity of a Crew Member for that portion of the event and shall not log that event.

The AG/OUI will complete the TERF and AG syllabi prior to the initial NTPS-6100. However, the AG/OUI shall not be issued qualification letters or utilized as a qualified crewmember (not under the supervision of the appropriate level Crew Chief Instructor for that event, and not able to carry passengers) until after the completion of NTPS-6100 and CRM-6101.

After successful completion of NTPS-6100, and CRM-6101 the AG/OUI may be designated an Aerial Gunner/Observer at the discretion of the commanding officer. At this time a designation letter as an Aerial Gunner/Observer along with a qualification letter for TERF and AG shall be routed to the commanding officer for signature. The original designation/qualification letters, signed by the commanding officer shall be placed in the AG/O's NATOPS jacket along with a copy in their APR jacket with a corresponding logbook entry. An AMOS code of 6199 shall be run on the AG/O thru the unit S-1/IPAC. All paperwork shall be properly logged prior to utilizing the newly designated AG/O as a qualified crewmember (to carry passengers, or without the supervision of the appropriated level Crew Chief Instructor).

Once the commanding officer has designated the AG/OUI as an AG/O they may be awarded and will be authorized to wear the Naval Aircrew Breast Insignia.

The designated AG/O may continue and conduct all training in Core Skill/Mission Skill/Core

Plus/Mission Plus Skill phases of training, attaining any and all qualifications associated with these phases of training. The AG/O shall not conduct any of the Instructor Phase of training and shall hold no instructor qualifications unless otherwise specified in the MAWTS-1 Course Catalog.

4.6 CORE INTRODUCTION PHASE. N/A for CH-53K Aerial Observer / Gunner Chapter.

4.7 CORE INTRODUCTION STAGES. N/A for CH-53K Aerial Observer / Gunner Chapter.

4.8 CORE PHASE

4.9 CORE STAGES. For Individual T&R events refer to Chapter 3 of this manual.

#### 4.9.1 ACADEMIC TRAINING

The Academic syllabus is designed to ensure aircrew receive the proper academic training prior to starting a new phase and stage of training. Within each phase of training (0000-6000) 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. The Enlisted Aircrew Training Manager (EATM, shall ensure that the appropriate academic/ground training event is manually updated in MSHARP and logged in the APR.

The purpose of the academic syllabus is to ensure that required academic courses for each phase/stage of training are completed and logged in M-SHARP for each Crew Member. A summary of academic classes required for all of the phases of training (2000-6000) are listed below with their corresponding T&R code. Where indicated, standardized academic training materials exist and may be obtained from the sponsoring activity.

The academic/ground training shall be complete IAW the phase and/or stage requirements and prerequisites. Upon completion, the AG/OUI / AG/O shall report to the Enlisted Aircrew Training Manager (EATM) in the Operations Department. The EATM shall manually update the training code in MSHARP.

The EATM shall log the academic/ground training event on the Academic Tracker located at the end of Chapter 3 of this manual.

The EATM shall ensure that the Academic Tracker is properly located in the individuals APR jacket in section 3 under the ground school tab. Additional academic/ground training classes not listed as requirements in the T&R shall be logged on the Additional Academic Tracker located at the end of Chapter 3 of this document and logged in section 3 of the individuals APR jacket under the ground school tab.

#### ACADEMIC OVERVIEW

ACADEMICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	CORE, MISSION, CORE PLUS, MISSION PLUS SKILL ACADEMICS
ACAD-2003	1.0	*	B		G		(U) Internal Cargo Operations
ACAD-2004	1.0	*	B		G		(S) AAR 47 / ALE 47
ACAD-2012	1.0	*	B		G		(S) APR-39
ACAD-2019	1.0	*	B		G		(S) AAQ-24
ACAD-2050	1.0	*	B		G		(U) EA Tactical aircrew considerations and responsibility (TACR)
ACAD-2051	1.0	*	B		G		(U) EA Terrain flight
ACAD-2052	1.0	*	B		G		(U) EA Night vision training
ACAD-2053	1.0	*	B		G		(U) EA Fundamentals of aerial gunnery
ACAD-2055	1.0	*	B		G		(U) EA GAU-21 .50 caliber machine gun
ACAD-2056	1.0	*	B		G		(U) EA Laser aiming devices
ACAD-2058	1.0	*	B		G		(U) EA Basic principles of escort operations
ACAD-3002	1.0	*	B		G		(U) NEO Execution
ACAD-3004	1.0	*	B		G		(S) PERSONNEL RECOVERY

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ACAD-3005	1.0	*	B		G	(S) CH-53 TRAP TTPS
ACAD-3006	1.0	*	B		G	(U) CASEVAC
ACAD-4011	1.0	*	B		G	(U) EA Aviation Delivered Ground Refueling
ACAD-4050	1.0	*	B		G	(U) EA Basic principles of electronic warfare
ACAD-4051	1.0	*	B		G	(U) EA DM/GTR part 1
ACAD-4052	1.0	*	B		G	(U) EA DM/GTR part 2
ACAD-4053	1.0	*	B		G	(U) EA Training the tail gunner
ACAD-4300	1.0	*	B		G	(U) EA Battle Field Illumination

- 4.10 MISSION PHASE. For Individual T&R events refer to Chapter 3 of this manual.
- 4.11 MISSION STAGES. For Individual T&R events refer to Chapter 3 of this manual.
- 4.12 CORE PLUS PHASE. For Individual T&R events refer to Chapter 3 of this manual.
- 4.13 CORE PLUS STAGES. For Individual T&R events refer to Chapter 3 of this manual.
- 4.14 MISSION PLUS PHASE. For Individual T&R events refer to Chapter 3 of this manual.
- 4.15 MISSION PLUS STAGES. For Individual T&R events refer to Chapter 3 of this manual.
- 4.16 INSTRUCTOR TRAINING PHASE. Not applicable to AG/Os unless otherwise stated in the MAWTS- 1 Course Catalog.
- 4.17 INSTRUCTOR TRAINING STAGES. Not applicable to AG/Os unless otherwise stated in the MAWTS- 1 Course Catalog.
- 4.18 REQUIREMENTS, QUALIFICATIONS, CERTIFICATIONS AND DESIGNATIONS (RQCD) PHASE. For Individual T&R events refer to Chapter 3 of this manual
- 4.19 REQUIREMENTS, QUALIFICATIONS, CERTIFICATIONS AND DESIGNATIONS (RQCD) PHASE. For Individual T&R events refer to Chapter 3 of this manual.
- 4.20 MISSION ESSENTIAL TASK (MET) PHASE. N/A for CH-53K Aerial Observer / Gunner.
- 4.21 MISSION ESSENTIAL TASK (MET) STAGES. N/A for CH-53K Aerial Observer / Gunner.
- 4.22 AVIATION CAREER PROGRESSION MODEL (ACPM) PHASE. N/A for CH-53K Aerial Observer / Gunner.
- 4.23 AVIATION CAREER PROGRESSION MODEL (ACPM) STAGES. N/A for CH-53K Aerial Observer / Gunner.

4.24 ELECTRONIC AIRCREW TRAINING FORM (EATF) REASON CODES.

CH-53K EATF REASON CODES							
Reason Code Category Description	Syllabus Name	Reason	Change	Update Reason Code Category Description	Update Syllabus Name	Update Reason	Po Notes
CRM	CH-53K Pilot	Decision Making					
CRM	CH-53K Pilot	Adaptability / Flexibility					
CRM	CH-53K Pilot	Assertiveness					
CRM	CH-53K Pilot	Communication					
CRM	CH-53K Pilot	Leadership					
CRM	CH-53K Pilot	Mission Analysis					
CRM	CH-53K Pilot	Situational Awareness					
DND	CH-53K Pilot	Aircraft					
DND	CH-53K Pilot	Instructor					
DND	CH-53K Pilot	Not Required					
DND	CH-53K Pilot	Time					
DND	CH-53K Pilot	Weather					
OTHER	CH-53K Pilot	Other Resource					
Briefing/Knowledge	CH-53K Pilot	Instructor Skill/Technique					
Briefing/Knowledge	CH-53K Pilot	Limitations					
Briefing/Knowledge	CH-53K Pilot	NATOPS Brief					
Briefing/Knowledge	CH-53K Pilot	NATOPS, MDG, NTTP					
Briefing/Knowledge	CH-53K Pilot	SOPs					
Briefing/Knowledge	CH-53K Pilot	Systems					
CRM	CH-53K Pilot	Instructor Skill/Technique					
DND	CH-53K Pilot	Hotseat					
Flight Skills (PAC)	CH-53K Pilot	Airspeed Control					
Flight Skills (PAC)	CH-53K Pilot	Altitude Control					
Flight Skills (PAC)	CH-53K Pilot	Attitude Control					
Flight Skills (PAC)	CH-53K Pilot	Closure Rate					
Flight Skills (PAC)	CH-53K Pilot	Dash-2 Position Control					
Flight Skills (PAC)	CH-53K Pilot	Descent Rate					
Flight Skills (PAC)	CH-53K Pilot	Drift Control					
Flight Skills (PAC)	CH-53K Pilot	EPs					
Flight Skills (PAC)	CH-53K Pilot	Flight Control Inputs					
Flight Skills (PAC)	CH-53K Pilot	Glideslope Control					
Flight Skills (PAC)	CH-53K Pilot	Heading Control					
Flight Skills (PAC)	CH-53K Pilot	Scan					
Flight Skills (PAC)	CH-53K Pilot	Instructor Skill/Technique					
Flight Skills (PAC)	CH-53K Pilot	Radio Calls					
Flight Skills (PNAC)	CH-53K Pilot	Checklists					
Flight Skills (PNAC)	CH-53K Pilot	Cockpit Setup					
Flight Skills (PNAC)	CH-53K Pilot	Descent Rate					
Flight Skills (PNAC)	CH-53K Pilot	EPs					
Flight Skills (PNAC)	CH-53K Pilot	Instrument Crosscheck					
Flight Skills (PNAC)	CH-53K Pilot	Instructor Skill/Technique					
Mission Planning	CH-53K Pilot	Instructor Skill/Technique					
Mission Planning	CH-53K Pilot	Route Planning / Map Preparation					
Mission Planning	CH-53K Pilot	Smart Pack items					
Mission Planning	CH-53K Pilot	Weight and power calculation					
Mission Systems	CH-53K Pilot	FLIR usage					
Mission Systems	CH-53K Pilot	GPS usage					
Mission Systems	CH-53K Pilot	Instructor Skill/Technique					
Mission Systems	CH-53K Pilot	Navigation Equipment / Switchology					
Mission Systems	CH-53K Pilot	NVG usage					
Mission Systems	CH-53K Pilot	Radio Usage					

CH-53K EATF REASON CODES							
Reason Code Category Description	Syllabus Name	Reason	Change	Update Reason Code Category Description	Update Syllabus Name	Update Reason	Po Notes
CRM	CH-53K Crew Chief	Decision Making					
CRM	CH-53K Crew Chief	Adaptability / Flexibility					
CRM	CH-53K Crew Chief	Assertiveness					
CRM	CH-53K Crew Chief	Communication					
CRM	CH-53K Crew Chief	Leadership					
CRM	CH-53K Crew Chief	Mission Analysis					
CRM	CH-53K Crew Chief	Situational Awareness					
DND	CH-53K Crew Chief	Aircraft					
DND	CH-53K Crew Chief	Instructor					
DND	CH-53K Crew Chief	Not Required					
DND	CH-53K Crew Chief	Time					
DND	CH-53K Crew Chief	Weather					
OTHER	CH-53K Crew Chief	Other Resource					
Briefing	CH-53K Crew Chief	Mission Brief / Debrief					
DND	CH-53K Crew Chief	Other Resource					
DND	CH-53K Crew Chief	Student Performance					
Execution	CH-53K Crew Chief	Egress					
Execution	CH-53K Crew Chief	Landing					
Execution	CH-53K Crew Chief	Objective Area					
Execution	CH-53K Crew Chief	Shutdown					
Execution	CH-53K Crew Chief	Start-up					
Execution	CH-53K Crew Chief	Troubleshooting					
Knowledge-Equipment	CH-53K Crew Chief	Limitations					
Knowledge-Equipment	CH-53K Crew Chief	NATOPS, MDG, NTTP					
Knowledge-Equipment	CH-53K Crew Chief	SOP's, Policies, and Instructions					
Knowledge-Equipment	CH-53K Crew Chief	Systems Knowledge					
Preflight	CH-53K Crew Chief	ADB					
Preflight	CH-53K Crew Chief	Inspection					
Preflight	CH-53K Crew Chief	Servicing					
Preflight	CH-53K Crew Chief	Time Management					
Preflight	CH-53K Crew Chief	Troubleshooting					
Skills	CH-53K Crew Chief	Checklists and Flows					
Skills	CH-53K Crew Chief	Communication / Std terminology					
Skills	CH-53K Crew Chief	Depth Perception					
Skills	CH-53K Crew Chief	Drift Corrections					
Skills	CH-53K Crew Chief	EPs					
Skills	CH-53K Crew Chief	Obstacle Avoidance					
Skills	CH-53K Crew Chief	Wingman/Traffic calls					

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## 4.25 CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)

CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REF POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
CORE PHASE (2000)									
ACADEMICS (ACAD)									
	ACAD	AAR/ALE 47	2581				*		
	ACAD	APR-39	2580				*		
	ACAD	AAQ-24	2582				*		
	ACAD	TACR	2050				*		
	ACAD	EA TERF	2051				*		
	ACAD	EA NS TRAINING	2052				*		
	ACAD	FUNDAG	2053				*		
	ACAD	EA GAU-21	2055				*		
	ACAD	EA LASER AIMING	2056				*		
	ACAD	EA ESCORT OPS	2058				*		
INTERNAL LOADS (INT)									
INT	ACAD	CH53 CARGO OPERATIONS	2003				*		
	INT	CARGO LAB	2100				*	2050, 2052~N	
	INT	PAX LAB	2101				*	2050, 2052~N	
	INT	(463L) CARGO LOADING SIM	2102		2102		*		
	INT	CARGO	2105	2105		2105	365	2050, 2052~N, 2100	
	INT	PAX	2106	2106		2106	*	2050, 2052~N, 2101	
	INT	(463L) CARGO LOADING	2107	2107	2107	2107	*	2050, 2052~N, 2102	
FORMATION (FORM)									
FORM	FORM	DAY FORM	2110	2110	2110	2110	180	2050	
CONFINED AREA LANDING (CAL)									
CAL	CAL	CALS	2210				*	2050	
	CAL	SECTION CALS	2211	2211	2211	2211	365	2110, 2210	2110
TERRAIN FLIGHT (TERF)									
TERF	TERF	TERF	2310				*	2050, 2051	
	TERF	SECTION TERF	2311	2311	2311	2311	365	2110, 2310	2110, 2310
EXTERNAL (EXT)									
EXT	SEXT	EXTERNAL SIM	2400	2400		2400	485		
	EXT	SINGLE POINT	2410				*	2210	2210
	EXT	DUAL POINT	2411	2411	2411	2411	365	2210	2210, 2410
	EXT	HLL SINGLE POINT	2420				*	2220, 2410	2210, 2220, 2410
	EXT	HLL DUAL POINT	2421	2421		2421	180	2220, 2411	2210, 2220, 2410, 2411, 2420
	EXT	LLL EXTERNALS	2430	2430	2430	2430	180	2230, 2420, 2421, NSQ-HLL	2210, 2220, 2230, 2410, 2411, 2420, 2421
GROUND THREAT REACTION (GTR)									



CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REF POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
GTR	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
AERIAL GUNNERY GAU-21 (AG)									
AG	AG	GAU-21 LAB	2800				*	2055	
	AG	GAU-21 MWPC LAB	2801		2801		*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802				*	2801	
	AG	DAY AG	2812				*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813	2813	2813	365	2311,2812	2812
	AG	NIGHT AG	2842				*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842~NS
TACTICS (TAC)									
TAC	TAC	DAY LOW THREAT	2910				*	2058,2211,TERFQ	2106,2110,2210,2211
	TAC	DAY MED THREAT	2911	2911		2911	365	2910	2106,2110,2210,2211,2910
NIGHT SYSTEMS HIGH LIGHT LEVEL (HLL)									
HLL	HLL	HLL FORM	2120	2120		2120	365	2052,2110	2110
	HLL	HLL CALS	2220				*	2052,2210	2210
	HLL	HLL SEC CALS	2221	2221	2221	2221	180	2120,2211,2220	2110,2120,2210,2211,2220
	HLL	HLL TERF	2320				*	2052,2310,2120	2110,2120,2310
	HLL	HLL SEC TERF	2321	2321	2321	2321	180	2120,2311,2320	2110,2120,2310,2311,2320
	HLL	HLL LOW THREAT	2920	2920		2920	365	2221,2321,2910	2105,2106,2110,2120,2210,2211,2220,2221,2910
NIGHT SYSTEMS LOW LIGHT LEVEL (LLL)									
LLL	LLL	LLL CALS	2230				*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	2321	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL TERF	2330				*	NSQ HLL	2310,2320
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									

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CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REF POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
MISSION PHASE (3000)									
COMBAT ASSAULT TRANSPORT (CAT)									
CAT	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	NEO EXECUTION	3082						
	CAT	CBT ASLT TRNSPT	3240	3240		3240	365	NSQ LLL,AGQ,2540,2541, ACAD-3082	
AERIAL DELIVERY (AD)									
AD	EXT	LLL EXTERNALS	2430	2430	2430	2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	AD	AERIAL DELVIERY	3340	3340		3340	365	NSQ LLL,AGQ,2430,2540	
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)									
TRAP	EXT	LLL EXTERNALS	2430	2430	2430	2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	PERSONNEL RECOVERY	3084				*		
	ACAD	CH-53 TRAP TTPS	3085				*		
	TRAP	TRAP	3440	3440		3440	365	NSQ LLL,AGQ,3084,3085,2540	

CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REF POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
AERIAL EVACUATION (AE)									
AE	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	LLL	LLL SEC CALS	2231	2231	2231	2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331	2331	2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	(U) CASEVAC	3086				*		
	AE	AERIAL EVACUATION	3540	3540		3540	365	NSQ LLL,AGQ,3086,2540	
CORE PLUS PHASE (4000)									
ACADEMICS (ACAD)									
	ACAD	EA ADGR	4011				*		
	ACAD	EA EW	4050				*		
	ACAD	EA DM/GTR PART 1	4051				*		
	ACAD	EA DM/GTR PART 2	4052				*		
	ACAD	EA TAIL GUNNER	4053				*		
	ACAD	EA BATTLEFIELD ILLUM	4300				*		
HELICOPTER INSERTION & EXTRACTION (HIE)									
HIE	HIE	HELOCAST	4110	4110		4110	485	TERFQ,2106	2106
	HIE	FASTROPE/RAPPEL	4140	4140			*	2210,2920~NS,2930~LLL	2106
	HIE	PARA/OPS	4141	4141			*	2920~NS,2930~LLL	2106
	HIE	CARGO PARA/OPS	4142	4142			*	2920~NS,2930~LLL	2105,2106
AVIATION DELIVERED GROUND REFUELING (ADGR)									
ADGR	ADGR	AVIATION DELIVERED GROUND REFUELING	4240	4240		4240	365	2105,2210,2920~HLL,2930~LLL,4011	2105, 2210
BATTLEFIELD ILLUMINATION (BI)									
BI	BI	BATTLEFIELD ILLUMINATION	4340	4340		4340	1095	NSQ~LLL,AGQ	2105, 2220~HLL, 2230~LLL
EXTERNALS ( EXT)									
EXT	EXT	TERF EXTERNALS	4440	4440		4440	485	2310,2410~SINGLE POINT,2411~DUAL POINT 2320~HLL,2420~HLL,2330~LLL,2430~LLL,	2310,2410~SINGLE POINT,2411~DUAL POINT,2420~HLL SINGLE POINT,2421~HLL DUAL POINT, 2430~LLL
	EXT	INDEPENDENT HOOK EXT	4441				*	2410~SINGLE POINT,2411~DUAL POINT	
	EXT	NS INDEPENDENT HOOK EXT	4442	4442		4442	365	2410~SINGLE POINT,2411~DUAL POINT 2320~HLL,2420~HLL,2330~LLL,2430~LLL	4441

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CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)										
SKILL	STAGE	DESCRIPTION	BASIC POI	REF POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING	
DEFENSIVE MEASURES (DM)										
DM	DM	RW DM	4510	4510		4510	365	TERFQ,2581,2582,4051,4052	2110,2310,2311	
	DM	FW DM	4511	4511		4511	365	TERFQ,2581,2582,4051,4052	2110,2310,2311	
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)										
CBRN	CBRN	CBRN	4600	4600		4600	1095	2210,2220~NS,2230~LLL		
FIELD CARRIER LANDING PRACTICE (FCLP)										
FCLP	SFCLP	FCLP SIM	4700				*		2210	
	FCLP	DAY FCLP	4710	4710		4710	365	2210	2210	
	FCLP	NS FCLP	4740	4740		4740	365	2220~NS,2230~LLL,4710	2210,HLL~2220,LLL~2230,4710	
CARRIER QUALIFICATION (CQ)										
CQ	DCQ	DAY CQ	4711	4711		4711	365	4710	2210,4710	
	UACQ	UNAIDED CQ	4741	4741		4741	365	4711		
	NSCQ	NIGHT CQ	4742	4742		4742	365	4740,NSQ-HLL,NSQ-LLL~LLL	HLL~2220,LLL~2230,4710,4740,4711	
TAIL GUNNERY (TG)										
TG	TG	STATIC TG TRAINING	4800				*	AGQ,4053		
	TG	DAY TG	4810				*	AGQ,4800	2812	
	TG	DAY SECTION TG	4811	4811	4811	4811	365	4810	2812,2813	
	TG	NIGHT SECTION TG	4840	4840	4840	4840	180	4811	2812,2813,2842,2843,4810,4811	
	MTG	MTG	4841				*	2812~D,2842~NS,4810~D,4840~NS	2812,2813~SEC,2842,2843~NS SEC,4810~TG,4811~SEC TG,4840~NS TG	
TACTICS (TAC)										
TAC	TAC	DIV TAC	4940	4940		4940	365	2911,2920~HLL,2930~LLL	2110,2210,2211,2910,2911	
	TAC	URBAN TAC	4941	4941		4941	*	2920~HLL,2930~LLL	2110,2120,2210,2211,2220~HLL,2221~HLL,2910,2911 2920~HLL,2230~LLL,2231~LLL,2930~LLL	
RAPID INSERT/EXTRACTION (RIE)										
RIE	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331	
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331	
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842	
	RIE	RIE	4980	4980		4980	365	NSQ LLL,AGQ		
AVIATION DELIVERED GROUND REFUELING (ADGR)										
ADGR	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331	
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331	
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842	
	ADGR	TBFDS OPERATION	4240	4240			365	2105,2210,2920~NS,2930~LLL,4011,4200	2105,2210	
	ADGR	ADGR TACTICS	4981	4981		4981	365	NSQ LLL,AGQ,4240	4240	

CH-53K AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REF POI	Series Conv POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
EXPEDITIONARY SEA BASED OPERATIONS (SEA)									
SEA	GTR	NON RADAR GTR	2540	2540		2540	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	GTR	RADAR GTR	2541	2541		2541	365	2581,2582,4051,4052,TERFQ,2321~NS,2331~LLL	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	SEA	SEA BASED	4982	4982		4982	365	NSQ LLL,AGQ,	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) PHASE [6000]									
NATOPS (NTPS)									
NTPS	NTPS	OPEN BOOK EXAM	6000	6000	6000	6000	365		
	NTPS	CLOSED BOOK EXAM	6001	6001	6001	6001	365	6000	
	NTPS	ORAL EXAM	6002	6002	6002	6002	365	6001	
	NTPS	MONTHLY EP QUIZ	6004	6004		6004	30	6100,6101	
	NTPS	QUARTERLY EP EVAL	6005	6005		6005	90	6100,6101	
	NTPS	NATOPS EVAL FLT	6100	6100	6100	6100	365	6002	
CRM									
CRM	CRM	CRM GRND CLASS	6003	6003	6003	6003	365		
	CRM	CRM FLT	6101	6101	6101	6101	365	6003	

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4.14 AERIAL OBSERVER / GUNNER T&R MATRIX

CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
CORE PHASE (2000)																			
ACADEMICS (ACAD)																			
	ACAD	2580	(S) APR-39	X					1.0						G		*		2580
	ACAD	2050	(U) EA TAC AIRCREW CON	X					1.0						G		*		2050
	ACAD	2058	(U) EA ESCORT OPERATIONS	X					1.0						G		*		2058
ACAD TOTAL								11	11.0	0	0.0	0	0.0						
INTERNAL LOADS (INT)																			
INT	ACAD	2003	(U) CH53 CARGO OPERATIONS	X					1.0						G		*		2003
	INT	2100	CARGO LAB	X					1.0					(N)	G		*		2100
	INT	2101	PAX LAB	X					1.0					(N)	G		*		2101
	INT	2102	(463L) CARGO LOADING SIM	X		X			1.5					(N)	G		*		2102
	INT	2105	CARGO	X	X		X						1.5	(NS)	A	1	365		2105
	INT	2106	PAX	X	X		X						1.5	(NS)	A	1	*		2106
	INT	2107	463L CARGO LOADING	X		X			1.5				0	(NS)	G	1	*		2107
INT TOTAL								4	6.0	0	0.0	2	3.0						
FORMATION (FORM)																			
FORM	FORM	2110	DAY FORM	X	X	X	X						1.5	D	A	2	180		2110
FORM TOTAL								0	0.0	0	0.0	1	1.5						
CONFINED AREA LANDING (CAL)																			
CAL	CAL	2210	CALS	X									1.5	D	A/S	1	*		2210
	CAL	2211	SECTION CALS	X	X	X	X						1.5	D	A	2	365		2211
CAL TOTAL								0	0.0	0	0.0	2	3.0						
TERRAIN FLIGHT (TERF)																			
TERF	ACAD	2051	TERF	X					1.0						G		*		2051
	TERF	2310	TERF	X									1.5	D	A/S	1	*		2310
	TERF	2311	SECTION TERF	X	X	X	X						1.5	D	A	2	365		2311
TERF TOTAL								0	1.0	0	0.0	2	3.0						

CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
EXTERNAL (EXT)																			
EXT	SEXT	2400	EXTERNAL SIM	X	X		X						2.0	(NS)	S/A	1	485		2400
	EXT	2410	SINGLE POINT	X									1.5	D	A	1	*		2410
	EXT	2411	DUAL POINT	X	X	X	X						1.5	D	A	1	365		2411
	EXT	2420	HLL SINGLE POINT	X									1.5	HLL	A	1	*		2420
	EXT	2421	HLL DUAL POINT	X	X		X						1.5	HLL	A	1	180		2421
	EXT	2430	LLL EXTERNALS	X	X	X	X						1.5	LLL	A	1	180		2430
EXT TOTAL								0	0.0	0	0.0	5	9.5						
GROUND THREAT REACTION (GTR)																			
GTR	ACAD	2581	AAR/ALE-47	X					1.0						G		*		2581
	ACAD	2582	AAQ-24	X					1.0						G		*		2582
	ACAD	4050	BASIC PRINCIPLES OF EW	X					1.0						G		*		4050
	ACAD	4051	DM/GTR 1	X					1.0				1.5		G		*		4051
	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
GTR TOTAL								0	4.0	0	0.0	1	4.5						
AERIAL GUNNERY GAU-21 (AG)																			
AG	ACAD	2053	FUNDAMENTALS OF AERIAL GUNNERY	X					1.0						G		*		2053
	ACAD	2055	EA GAU-21	X					1.0						G		*		2055
	ACAD	2056	LASER AIMING DEVICES	X					1.0						G		*		2056
	AG	2800	GAU-21 LAB	X					3.0					D	G		*		N/A
	AG	2801	GAU-21 MWPC LAB	X		X			2.0					D	G		*		N/A
	AG	2802	WEAPON PROCEDURES LAB	X					2.0					D	G		*		N/A
	AG	2812	DAY AG	X									1.5	D	A	1	*		2812
	AG	2813	DAY SEC AG	X	X	X	X						1.5	D	A	2+	365		2813
	AG	2842	NIGHT AG	X									1.5	NS	A	1	*		2842
	AG	2843	NIGHT SEC AG	X	X	X	X						1.5	NS	A	2+	180		2843
AG TOTAL								6	10.0	0	0.0	4	6.0						

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CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
TACTICS (TAC)																			
TAC	TAC	2910	DAY LOW THREAT	X									2.0	D	A	2	*		2910
	TAC	2911	DAY MED THREAT	X	X		X						2.0	D	A	2	365		2911
TOTAL TAC STAGE								0	0.0	0	0.0	2	4.0						
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)																			
HLL	ACAD	2052	EA NIGHT VISION TRAINING	X					1.0						G		*		2052
	HLL	2120	HLL FORM	X	X		X						1.5	HLL	A	2	365		2120
	HLL	2220	HLL CALS	X									1.5	HLL	A	1	*		2220
	HLL	2221	HLL SEC CALS	X	X	X	X						1.5	HLL	A	2	180		2221
	HLL	2320	HLL TERF	X									1.5	HLL	A	1	*		2320
	HLL	2321	HLL SEC TERF	X	X	X	X						1.5	HLL	A	2	180		2321
	HLL	2920	HLL LOW THREAT	X	X		X						2.0	HLL	A	2	365		2920
TOTAL NS HLL STAGE								0	1.0	0	0.0	6	9.5						
NIGHT SYSTEM LOW LIGH LEVEL (LLL)																			
LLL	LLL	2230	LLL CALS	X									1.5	LLL	A	1	*		2230
	LLL	2231	LLL SEC CALS	X	X	X	X						1.5	LLL	A	2	180		2231
	LLL	2330	LLL TERF	X									1.5	LLL	A	1	*		2330
	LLL	2331	LLL SEC TERF	X	X	X	X						1.5	LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X						2.0	LLL	A	2+	365		2930
TOTAL NS LLL STAGE								0	0.0	0	0.0	5	8.0						
CORE PHASE TOTAL								14	18.0	2	0.0	32	50.0						
MISSION PHASE (3000)																			



CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
COMBAT ASSAULT TRANSPORT (CAT)																			
CAT	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	ACAD	3082	NEO EXECUTION	X					1.5						G		*		3082
	CAT	3240	CMBT ASSAULT TRANSPORT	X	X		X						2.0	(NS)	A	2+	365		3240
AT TOTAL								1	1.5	0	0.0	1	2.0						
AERIAL DELIVERY (AD)																			
AD	EXT	2430	LLL EXTERNALS	X	X	X	X							LLL	A	1	180		2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	AD	3340	AERIAL DELVIERY	X	X		X						2.0	(NS)	A	2+	365		3340
AD TOTAL								0	0.0	0	0.0	1	2.0						
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)																			
TRAP	EXT	2430	LLL EXTERNALS	X	X	X	X							LLL	A	1	180		2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	ACAD	3084	(S) PERSONNEL RECOVERY	X					1.0						G		*		3084
	ACAD	3085	(S) CH53 SPECIFIC TRAP TTPS	X					0.8						G		*		3085
	TRAP	3440	TRAP	X	X		X						2.0	(NS)	A	2+	365		3440
TRAP TOTAL								2	1.8	0	0.0	1	2.0						

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CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
AERIAL EVACUATION (AE)																			
AE	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X							(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X	X	X							NS	A	2+	180		2843
	LLL	2331	LLL SEC TERF	X	X	X	X							LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	X	X	X	X							LLL	A	2+	365		2930
	ACAD	3086	(U) CASEVAC	X					0.5						G		*		3086
	AE	3540	AERIAL EVACUATION	X	X		X						2.0	(NS)	A	2+	365		3540
AE TOTAL								1	0.5	0	0.0	1	2.0						
TOTAL MISSION PHASE								4	3.8	0	0.0	5	10.0						
CORE PLUS PHASE (4000)																			
HELICOPTER INSERTION & EXTRACTION (HIE)																			
HIE	HIE	4110	HELOCAST	X	X		X						1.5	D	A	1	485		4110
	HIE	4140	FASTROPE/RAPPEL	X									1.5	(NS)	A	1	*		4140
	HIE	4141	PARA/OPS	X									1.5	(NS)	A	1	*		4141
	HIE	4142	CARGO PARA-OPS	X									1.5	(NS)	A	1	*		4142
HIE TOTAL								0	0.0	0	0.0	4	6.0						
AVIATION DELIVERED GROUND REFUELING (ADGR)																			
ADGR	ACAD	4011	EA ADGR	X											G		*		4011
	ADGR	4240	TBFDS OPERATION	X	X		X		1.5					(NS)	G	1	365		4200
ADGR TOTAL								1	1.5	0	0.0	0	0						
BATTLEFIELD ILLUMINATION (BI)																			
BI	ACAD	4054	EA BATTLEFIELD ILLUMINATION	X					1.0						G		*		4054
	BI	4340	BATTLEFIELD ILLUMINATION	X	X		X						1.5	NS	A	1	1095		4340
BI TOTAL								0	1.0	0	0.0	1	1.5						

CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
EXTERNALS (EXT)																			
EXT	TERF EXT	4440	NS TERF EXTERNALS	X	X		X						1.5	(NS)	A	1	485		4440
	EXT	4441	INDEPENDENT HOOK EXTERNALS	X									1.5	D	A	1	*		
	EXT	4442	NS INDEPENDENT HOOK EXTERNALS	X	X		X						1.5	NS	A	1	365		
TERF EXT TOTAL								0	0.0	0	0.0	2	3.0						
DEFENSIVE MEASURES (DM)																			
DM	ACAD	4051	CH-53 DM/GTR 1	X											G		*		
	ACAD	4052	CH-53 DM/GTR 2	X											G		*		
	DM	4510	RW DM	X	X		X						1.5	D	A	2	365		4510
	DM	4511	FW DM	X	X		X						1.5	D	A	2	365		4511
DM TOTAL								0	0.0	0	0.0	2	3.0						
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)																			
CBRN	CBRN	4600	CBRN	X	X		X							(NS)	G		1095		4600
CBRN TOTAL								0	1.0	0		0	0.0						
FIELD CARRIER LANDING PRACTICE (FCLP)																			
FCLP	SFCLP	4700	SIM FCLP	X							1.0			D	S		*		4700
	FCLP	4710	DAY FCLP	X	X		X						1.5	D	A	1	365		2710
	FCLP	4740	NS FCLP	X	X		X						1.5	NS	A	1	365		2742
FCLP TOTAL								0	0.0	1	1.0	2	3.0						
CARRIER QUALIFICATION (CQ)																			
CQ	DCQ	4711	DAY CQ	X	X		X						1.5	D	A	1	365		4711
	UACQ	4741	UNAIDED CQ	X	X		X						1.5	N*	A	1	365		4740
	NSCQ	4742	NIGHT CQ	X	X		X						1.5	NS	A	1	365		4743

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CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
CQ TOTAL								0	0.0	0	0.0	3	4.5						
TAIL GUNNERY (TG)																			
TG	ACAD	4053	EA TRAINING THE TAIL GUNNER	X											G		*		4053
	ACAD	2055	EA GAU-21	X											G		*		2055
	ACAD	2056	EA LASER AIMING DEVICES	X											G		*		2056
	TG	4800	STATIC TG TRAINING	X					1.5					(N)	S/A	1	*		4800
	TG	4810	DAY TG	X									1.5	D	A	1	*		4810
	TG	4811	DAY SECTION TG	X	X	X	X						1.5	D	A	2	365		4811
	TG	4840	NIGHT SECTION TG	X	X	X	X						1.5	NS	A	2	180		4840
MTG	4841	MOVING TARGET GUNNERY	X									1.5	(NS)	A/S	1+	*		4841	
TG TOTAL								1	1.5	0	0.0	4	6.0						
TACTICS (TAC)																			
TAC	TAC	4940	DIV TAC	X	X		X						2.0	(NS)	A	3+	365		4940
	TAC	4941	URBAN TAC	X									2.0	(NS)	A	2	*		4941
TAC TOTAL								0	0.0	0	0.0	2	4.0						
RAPID INSERTION/EXTRACTION (RIE)																			
RIE	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180		2843
	RIE	4980	RIE	X	X		X						2.0	(NS)	A	1+	365		4980
RIE TOTAL								0	0.0	0	0.0	4	6.5						

CH-53K AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																			
SKILL	PREFIX	TRNG CODE	T&R DESCRIPTION	POI				ACAD		SIM		FLIGHT		CON	DEVICE	# A/C	REFLY	EOM	EVENT CONV
				B	R	S	M	#	ACAD	#	SIM	#	FLT						
ADGR																			
ADGR	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180		2843
	ADGR	4240	TBFDS OPERATION	X	X		X						1.5	(NS)	A	1	365		4200
	ADGR	4981	ADGR TACTICS	X	X		X						2.0	(NS)	A	1+	365		4981
ADGR TOTAL								0	0.0	0	0.0	5	8.0						
EXPEDITIONARY SEA BASED (SEA)																			
SEA	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A/S	2	365		2540
	GTR	2541	RADAR GTR	X	X		X						1.5	(NS)	A	2	365		2541
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180		2843
	SEA	4982	SEA BASED	X	X		X						2.0	(NS)	A	1+	365		4982
SEA TOTAL								0	0.0	0	0.0	4	6.5						
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RCQD)																			
NATOPS (NTPS)																			
NTPS	NTPS	6000	OPEN BOOK EXAM	X	X	X	X		3.0						G		365	X	6000
	NTPS	6001	CLOSED BOOK EXAM	X	X	X	X		1.0						G		365	X	6001
	NTPS	6002	ORAL EXAM	X	X	X	X		2.0						G		365	X	6002
	NTPS	6004	MONTHLY EP QUIZ	X	X	X	X		1.0						G		30	X	6004
	NTPS	6005	QUARTERLY EP EVALUATION	X	X	X	X		1.0						A/S		90	X	6005
	NTPS	6100	NATOPS EVALUATION FLIGHT	X	X	X	X						1.5	(NS)	A/S	1	365	X	6100
NTPS TOTAL								5	8.0	0	0.0	1	1.5						
CRM																			
CRM	CRM	6003	CRM GRND CLASS	X	X	X	X		1.5						G		365	X	6003
	CRM	6101	CRM FLT	X	X	X	X						1.5	(NS)	A/S	1	365	X	6101
CRM TOTAL								1	1.5	0	0.0	1	1.5						

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4.26 ACADEMICS TRACKER FOR 2000 THROUGH 4000 PHASE

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER				
SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	CORE SKILL PHASE (2000)	DD/MM/YY	NAME OR SELF PACED	NAME
ACAD-2003	(U) CH-53 Internal Cargo Operations			
ACAD-2581	(S) AAR/ALE 47			
ACAD-2580	(S) APR-39			
ACAD-2582	(S) AAQ-24			
ACAD-2050	(U) EA Tactical Aircrew Considerations & Responsibility			
ACAD-2051	(U) EA Terrain Flight			
ACAD-2052	(U) EA Night Vision Training			
ACAD-2053	(U) EA Fundamentals of Aerial Gunnery			
ACAD-2055	(U) EA GAU-21			
ACAD-2056	(U) EA Laser Aiming Devices			
ACAD-2058	(U) EA Basic Principles of Escort Operations			
MISSION SKILL PHASE (3000)				
ACAD-3082	(U) NEO Execution			
ACAD-3084	(S) Personnel Recovery			
ACAD-3085	(S) CH53 Specific TRAP TTPS			
ACAD-3086	(U) CASEVAC			
CORE PLUS SKILL PHASE (4000)				
ACAD-4011	(U) EA Aviation Delivered Ground Refueling TBFDs (CH-53K)			
ACAD-4050	(U) EA Basic Principles of Electronic Warfare			
ACAD-4051	(U) EA Defensive Measures I			
ACAD-4052	(U) EA Defensive Measures II (CH-53)			
ACAD-4053	(U) EA Training the Tail Gunner			
ACAD-4300	(U) EA Battlefield Illumination			

#### 4.27 ADDITIONAL ACADEMICS TRACKER FOR 2000 PHASE THROUGH 8000 PHASE

[illegible]