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From: Commandant of the Marine Corps
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Subj: CH-53E TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14D

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

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

2. Cancellation. NAVMC 3500.47C.

3. Scope. Highlights of major changes included in this Manual are:

a. Chapter 1 revisions include the following:

(1) The number of core mission essential tasks (MET) was reduced from five to four. The MET removed is "conduct aviation operations from expeditionary shore-based sites."

(2) The air delivery MET was modified to align more closely with joint arena requirements. The required metric is to "conduct 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."

b. Chapter 2 revisions include the following:

(1) Introduction of the automated electronic aircrew training form.

(2) Additional emphasis has been added to discussion items for night vision goggle events to address differences between nomenclature to include strengths and weaknesses.

(3) The use of simulators and network simulators are leveraged and directed where practical.

c. Chapter 3 revisions include the following:

(1) Introduction of the automated electronic aircrew training form.

(2) Modified the secondary military occupational specialty crew chief syllabus to allow aerial observers to be assigned to the crew chief refresher program of instruction (POI) versus being assigned to the basic POI.

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(3) Introduction of the Marine Corps common aircrew trainer simulator for multiple events to be conducted versus being conducted in the aircraft.

4. 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 the Marine Corps Aviation T&R Program and Unit Training Management should be directed to: CG, TECOM, Marine Air-Ground Task Force Training and Education Standards Division (C 466), 1019 Elliot Road, Quantico, Virginia 22134.

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

6. Certification. Reviewed and approved this date.



W. F. MULLEN III
By direction

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RECORD OF ADMINISTRATIVE CHANGES

Log completed change action as indicated.

Admin Change Number	Description	Chapter(s)	Page Number(s)	Message Date-Time-Group
1	<p>-EVENTS FCP-6012, 6013, AND 6600 ADDED TO R POI.</p> <p>-ADDED ACAD-6013 AS A REQUIREMENT TO THE STAGE OVERVIEW MATRIX.</p> <p>-CHANGED DEVICE CODE FOR FCP-6617 FROM A TO A/S</p> <p>-MATCHED FCP-6600 POI ASSIGNMENTS IN THE EVENT HEADER TO THE STAGE OVERVIEW MATRIX.</p> <p>-ADDED ACAD-6013 AS A PREREQUISITE FOR FCP-6610.</p> <p>-ADDED FCP-6616 TO THE R POI.</p> <p>-ADDED FCP-6617 TO THE R POI.</p> <p>-CHANGED FCP-6617 DEVICE CODE FROM A TO A/S.</p> <p>-ADDED PREREQUISITES 6600, 6611, 6613, AND 6615 FOR FCP 6617.</p>	2	2-136 to 2-139 and associated matrices.	DoN Tracker 2021-TECOM_PSD_ASB-128

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CH-53E TRAINING AND READINESS UNIT REQUIREMENTS

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CHAPTER 1

CH-53E 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 training in the CH-53E Super Stallion and fulfill the roll of model manager for the CH-53E community.

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-53E squadrons. As of this publication date, a HMH/HMHT squadron is authorized.

1.2.1 **Tactical and Reserve Squadron**

HMH CH-53E					
Table of Organization					
Unit	Squadron*	Temp Squadron	Temp Squadron (-)	Detachment	Reserve
Aircraft	16	12	8	4	6
Pilots	38	30	22	8	19
Crew Chiefs	26	26	20	6	13
AO/AG**	26	26	20	6	13
**Aerial Observer / Aerial Gunner					
* Future Echo/Kilo Squadron					

1.2.2 **HMH Tactical and Reserve Squadron Critical MOSs**

CH-53E TACTICAL AND RESERVE SQUADRON CRITICAL MOSs			
MOS Description	PRIMARY MOS	Billet and/or MOS Description	SECONDARY MOS
Pilot	7566	Maintenance Control (Safe-for-flight)	6012
Crew Chief	6173	Collateral Duty Inspector (CDI)	6016
Aircraft Maintenance Chief	6019	Collateral Duty QAR (CDQAR)	6017
Avionics Tech	6323	Quality Assurance Representative (QAR)	6018
Airframe Mechanic	6153	WTI Pilot	7577
Ordnance Technician	6531	WTI Crew Chief	6177
Helicopter Mechanic	6113	Night Systems Instructor	7547
*Critical MOS - Those specialties that directly affect the unit's ability to undertake its mission. Definition per MCO 3000.13.			
MOS list provided by APP-33 (Readiness).			
MOS shortages shall be reported by the Temp squadron (12 Aircraft) only via DRRS-S (See MET Worksheets Appendix A).			
Note: Critical MOSs for Section Leader, Division Leader, Flight Leader, and Air Mission Commander are reported in DRRS-MC via the CMMR paragraph under Combat Leadership (Para 1.7).			

1.2.3 **Fleet Replacement Squadron**

FLEET REPLACEMENT SQUADRON				
Table of Organization				
Aircraft	Instructor Pilots	Crew Chiefs	Crew Chief Instructors	AO/AG*
12	24	24	11	24
*Aerial Observer / Aerial Gunner				

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 – Strategic (DRRS-S). Core Plus METs identify additional capabilities to support missions or plans which are limited in scope and/or theater specific. Core Plus METs may be included in readiness reporting when contained within an Assigned Mission METL. An Assigned Mission METL normally consists of selected METs (drawn from Core and Core Plus METs) necessary to conduct the assigned mission. MCO 3000.13 provides additional information on readiness reporting.

HMH CH-53E		
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	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-53E							
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-53E																																	
MCT TO CORE/MISSION/CORE PLUS SKILL MATRIX																																	
MISSION ESSENTIAL TASK (MET)	CORE SKILLS (2000 PHASE)													MISSION SKILLS (3000 PHASE)				CORE PLUS (4000 PHASE)															
																		CORE PLUS SKILLS													MISSION PLUS SKILLS		
	ACAD	FAM	INT	FORM	CAL	TERF	EXT	HAAR	AG	GTR	TAC	NS HLL	NS LLL	CAT	AD	TRAP	AE	ACAD	HIE	EXT	GTR	DM	CBRN	MTG	BI	FCLP	CQ	TG	TAC	RIE	ADGR	SEA	
	CAT	X	X	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	X			X	X			
TRAP	X	X	X	X	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	X	X			X	X			
MISSION PLUS																																	
RIE		X	X	X	X	X			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	X	X	X			X	X		X		
SEA		X	X	X	X	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-53E												
MET OUTPUT STANDARDS												
CH-53E Sqdn / Temp Sqdn / Temp Sqdn (-) / Detachment / Reserve Squadron (16/12/8/4/6) Aircraft												
CORE												
MET	SKILL	DESCRIPTION	OUTPUT STANDARD									
			MAXIMUM SORTIES BY MET AND COMPOSITION // NUMBER OF AIRCRAFT					MAXIMUM DAILY SORTIES*				
			SQUADRON	TEMP SQUADRON	TEMP SQUADRON (-)	DETACHMENT	RESERVE	SQUADRON	TEMP SQUADRON	TEMP SQUADRON (-)	DETACHMENT	RESERVE
			16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C
MCT 1.3.4.1	CAT	Conduct Combat Assault Transport	21	16	12	5	8	21	16	12	5	8
MCT 4.3.4.1	AD	Conduct Heavy Rotary Wing Air Delivery	21	16	12	5	8					
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel	15	13	9	5	8					
MCT 6.2.2	AE	Conduct Air Evacuation	21	16	12	5	8					
CORE PLUS												
MET	SKILL	DESCRIPTION	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	21	16	12	5	8
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	21	16	12	5	8					
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	4	2	2	2	2					
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	21	16	12	5	8					

*A 16/12/8/4/8 plane Mission Capable HMH Squadron/Temp Sqdn/Temp Sqdn (-) /Detachment/Reserve Squadron is able to execute 21/16/12/5/11 total overall sorties on a daily (24 hour period) basis during contingency/combat operations.

1.7 **CORE MODEL MINIMUM REQUIREMENTS (CMMR) TRAINING STANDARDS FOR READINESS REPORTING (DRRS-S).** The paragraphs and tables below delineate the minimum crew proficiency, qualifications and designations required to execute the MET output standards of para 1.6. MCO 3000.13 Readiness Reporting provides additional guidance and a detailed description of readiness reporting using DRRS-S.

1.7.1 The CMMR Readiness Reporting Matrix depicts the minimum crew composition (defined as a combination of qualifications and designations) reflecting the number of trained crews required per MET and minimum Combat Leadership requirements for readiness reporting purposes. The number of crews trained using the below minimum standards per crew capture the readiness capability of a squadron to perform the MET sortie.

HMH CH-53E										
CORE MODEL MINIMUM REQUIREMENTS (CMMR) FOR READINESS REPORTING										
CORE										
MET	ABBR	CREW POSITION				CREWS TRAINED REQUIRED PER MET (CREW CMMR)				
		PILOT	COPILOT*	CC	CC/AO*	SQDN	TEMP SQDN	TEMP SQDN(-)	DET	RES
						16 A/C	12 A/C	8 A/C	4 A/C	6 A/C
MCT 1.3.4.1	CAT	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	11	9	6	3	4
MCT 4.3.4.1	AD	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	11	9	6	3	4
MCT 6.2.1.1	TRAP	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	7	6	4	2	2
MCT 6.2.2	AE	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	11	9	6	3	4
CORE PLUS										
MET	ABBR	PILOT	COPILOT	CC	CC/AO*	SQDN	TEMP SQDN	TEMP SQDN(-)	DET	RES
						16 A/C	12 A/C	8 A/C	4 A/C	6 A/C
MCT 1.3.4.1.1	RIE	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	5	3	2	2
MCT 1.3.4.2.1	ADGR	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	5	3	2	2
MCT 1.3.3.3.1	SEA	MSP,HAC	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	5	3	2	2
<p>Note</p> <p>CMMR reflects the Advanced Training Standard. The Baseline Training Standard (70% of CMMR) for Mission / Mission Plus Skill and Baseline capability statements can be found on the MET Worksheets in Appendix A. Combat leadership only has CMMR values. There is no Baseline metric for Combat Leadership.</p>										
COMBAT LEADERSHIP										
DESIGNATION		SQUADRON 16 A/C	TEMP SQUADRON 12 A/C	TEMP SQUADRON(-) 8 A/C	DETACHMENT 4 A/C	RESERVE SQUADRON 6 A/C				
HELICOPTER AIRCRAFT COMMANDER		16	12	8	4	6				
SECTION LEADER		9	6	5	3	3				
DIVISION LEADER		6	4	3	2	2				
FLIGHT LEADER		4	3	2	1	2				
AIR MISSION COMMANDER		3	2	1	1	1				

*An NSQ (LLL) copilot/CC/AO that is not mission skill proficient must be paired with a qualified instructor for the mission skill and associated prerequisites in order to meet the minimum crew requirement for a particular MET.

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-S) 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).

CORE PHASE (2000 Phase)																														
CORE SKILL	PILOTS					CREW CHIEFS					AERIAL OBSERVER / AERIAL GUNNER																			
	Squadron	Temp Squadron	Squadron (-)	Detachment	Reserve Squadron	Squadron	Temp Squadron	Squadron (-)	Detachment	Reserve Squadron	Squadron	Temp Squadron	Squadron (-)	Detachment	Reserve Squadron															
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C															
ACAD	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
FAM	22	18	12	6	12																									
INT						11	9	6	3	6	11	9	6	3	6															
FORM	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
CAL	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
TERF	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
EXT	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
HAAR	14	12	8	4	4																									
AG	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
GTR	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
TAC	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
NS HLL	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
NS LLL	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
MISSION PHASE (3000 Phase)																														
MISSION SKILL	PILOTS					CREW CHIEFS					AERIAL OBSERVER / AERIAL GUNNER																			
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C															
CAT	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
AD	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
TRAP	14	12	8	4	4	7	6	4	2	2	7	6	4	2	2															
AE	22	18	12	6	12	11	9	6	3	6	11	9	6	3	6															
CORE PLUS PHASE (4000 Phase) [MISSION PLUS]																														
CORE PLUS SKILL	PILOTS					CREW CHIEFS					AERIAL OBSERVER / AERIAL GUNNER																			
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C															
ACAD	6	22	9	18	6	12	3	6	6	12	8	16	6	12	4	8	2	4	3	6										
HIE	11	22	9	18	6	12	3	6	6	12	8	16	6	12	4	8	2	4	3	6										
EXT	6	22	5	18	3	12	2	6	3	12	4	16	3	12	3	8	2	4	3	6										
GTR	6	22	5	18	3	12	2	6	3	12	4	16	3	12	3	8	2	4	3	6										
DM	6	22	5	18	3	12	2	6	6	12	4	16	3	12	3	8	2	4	3	6										
CBRN	22	22	18	18	12	12	6	6	12	12	16	16	12	12	8	8	4	4	6	13										
MTG	N/A					4	16	3	12	3	8	2	4	3	6	4	16	3	12	3	8	2	4	3	6					
FCLP	11	22	5	18	4	12	6	6	5	12	8	16	4	12	3	8	4	4	4	9	8	16	4	12	3	8	4	4	9	
CQ	11	22	5	18	4	12	6	6	5	12	8	16	4	12	3	8	4	4	4	9	8	16	4	12	3	8	4	4	9	
TG	N/A					4	16	3	12	3	8	2	4	3	6	4	16	3	12	3	8	2	4	3	6					
TAC	16	32	12	24	8	16	8	8	6	12	8	16	6	12	4	8	4	4	3	6	8	16	6	12	4	8	4	4	3	6
BI	6	12	3	10	1	6	4	4	2	4	8	16	4	12	3	8	4	4	3	6	8	16	4	12	3	8	4	4	3	6
MISSION PLUS SKILL	PILOTS					CREW CHIEFS					AERIAL OBSERVER / AERIAL GUNNER																			
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C															
RIE	6	12	5	10	3	6	2	4	2	4	3	6	3	5	2	3	1	2	1	2	3	6	3	5	2	3	1	2	1	2
ADGR	6	12	5	10	3	6	2	4	2	4	3	6	3	5	2	3	1	2	1	2	3	6	3	5	2	3	1	2	1	2
SEA	6	12	3	10	1	6	4	4	2	4	3	6	2	5	1	3	2	2	1	2	3	6	2	5	1	3	2	2	1	2

Note¹: 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-53E										
INSTRUCTOR DESIGNATIONS										
DESIGNATION	PILOTS					CREW CHIEFS				
	NUMBER OF AIRCRAFT					NUMBER OF AIRCRAFT				
	Squadron	Temp Squadron	Squadron(-)	Detachment	Reserve Squadron	Squadron	Temp Squadron	Squadron(-)	Detachment	Reserve Squadron
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C
ARI	6	3	2	1	3					
NII	4	2	2	1	2					
BIP	16	12	8	4	8					
TSI	16	12	8	4	8					
FLSE ¹	2	2	2	1	1					
TERFI	8	4	2	2	4	8	3	2	2	3
DMI	4	2	1	1	2	4	2	2	1	2
NSI	6	4	2	1	3	6	4	3	2	3
WTI	3	3	2	1	3	3	3	2	1	2
NI	1	1	1	0	1	1	1	1	1	1
ANI	3	2	2	1	1	3	2	2	1	1
FCPI	1	1	1	0	1					
AFCPI	3	2	2	1	1					
Note ¹ - FLSEs are Designated by the Group CO										
DESIGNATION	CREW CHIEFS AND/OR AERIAL GUNNER/AERIAL OBSERVER ²					NUMBER OF AIRCRAFT				
	Squadron	Temp Squadron	Squadron(-)	Detachment	Reserve Squadron					
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C					
AGI	6	3	2	2	3					
APFI	3	2	1	1	1					

1.9.2 FLEET REPLACEMENT SQUADRON

FLEET REPLACEMENT SQUADRON		
INSTRUCTOR DESIGNATIONS		
DESIGNATION	PILOTS	CREW CHIEFS
FRSI	24	11
BIP	24	
ARI	0	
NII	3	
FLSE ¹	2	
TERFI	24	12
DMI	0	0
WTI	1	2
NSI ²	2	6
NSFI	8	4
NI	1	1
ANI	2	1
TSI	24	
FCPI	1	
AFCPI	1	
FCPE	1	
NE	1	1
Note ¹ - FLSEs are Designated by the Group CO		
Note ² - NSIs may be used to fulfill NSFI requirement		
DESIGNATION	CREW CHIEFS AND/OR AERIAL GUNNER/AERIAL OBSERVER ³	
AGI	8	

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

1.10.1 Tactical and Reserve Squadron

HMH CH-53E					
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCOD)					
DESIGNATION	PILOTS				
	Squadron	Temp Squadron	Squadron(-)	Detachment	Reserve Squadron
	16 A/C	12 A/C	8 A/C	4 A/C	6 A/C
FCP	8	5	4	3	4
DESIGNATION	CREW CHIEFS				
FCF	8	5	4	3	4

1.10.2 FLEET REPLACEMENT SQUADRON

FLEET REPLACEMENT SQUADRON	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCOD)	
17 Aircraft/Temporary PTAA 12 Aircraft	
DESIGNATIONS	PILOTS
HAC	24
SECTION LEADER	24
DIVISION LEADER	4
FLIGHT LEADER	2
AIR MISSION COMMANDER	0
FCP	12
FCF CREW CHIEF	12
CRMF	24

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APPENDIX A

HMH (CH-53E) 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

19 Sep 2019

MCT 1.3.4.1 Conduct Combat Assault Transport (CAT)**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)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

- 11/9/6/3/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable.
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standard (CMMR):

- 11/9/6/3/4 Crews NS LLL Core Skill Proficient
- 11/9/6/3/4 Crews GTR Core Skill Proficient
- 11/9/6/3/4 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):

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

- 21/16/12/5/8 Sorties daily sustained during contingency/combat operations

MCT 4.3.4.1 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)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:

- 11/9/6/3/4 CH-53E aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standard (CMMR):

- 11/9/6/3/4 Crews NS LLL Core Skill Proficient
- 11/9/6/3/4 Crews GTR Core Skill Proficient
- 11/9/6/3/4 Crews Aerial Gunnery Core Skill Proficient
- 11/9/6/3/4 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):

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

- 21/16/12/5/8 Sorties daily sustained during contingency/combat operations

19 Sep 2019

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)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:

- 7/6/4/2/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable and Level 2 (L2) IAW ALERTS.
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standards (CMMR):

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

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

15/13/9/5/8 Sorties daily sustained during contingency/combat operations

MCT 6.2.2 Conduct Air Evacuation (AE)**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)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:

- 11/9/6/3/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable. Level 2 (L2) IAW ALERTS.
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standard (CMMR):

- 11/9/6/3/4 Crews NS LLL Core Skill Proficient
- 11/9/6/3/4 Crews GTR Core Skill Proficient
- 11/9/6/3/4 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):

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

- 21/16/12/5/8 Sorties daily sustained during contingency/combat operations

Core Plus**MCT 1.3.3.3.1 Conduct Aviation Operations from Expeditionary Sea-Based Sites (SEA)****Conditions:****C 1.3.2.1 Light**

Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C 1.3.1.3.1 Air Temperature

Atmospheric temperature at ground level (degrees Fahrenheit). Descriptors: Hot (> 85 F); Temperate (40 to 85 F); Cold (10 to 39 F); Very cold (< 10 F).

C 2.1.4.5 Intratheater Distance

Mileage between two locations (e.g., airfield to the FEBA). Descriptors: Very short (< 10 NM); Short (10 to 50 NM); Moderate (50 to 150 NM); Long (150 to 500 NM); Very long (> 500 NM).

Standards:

{Squadron (16 A/C)/Temp Sqdn (12 A/C)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:

- 6/5/3/2/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable. Level 2 (L2) IAW ALERTS.
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standards (CMMR):

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

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

- 21/16/12/5/8 Sorties daily sustained during contingency/combat operations

MCT 1.3.4.1.1 Conduct Airborne Rapid Insertion/Extraction (RIE)

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)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:

- 6/5/3/2/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable o And Level 2 (L2) IAW ALERTS.
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standard (CMMR):

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

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

- 21/16/12/5/8 Sorties daily sustained during contingency/combat operations

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MCT 1.3.4.2.1 Provide Aviation-Delivered Ground Refueling (ADGR)

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)/Temp Sqdn (-) (8A/C)/Det (4 A/C) /Reserve Sqdn (6 A/C)}:

Personnel:

- 6/5/3/2/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable and Level 2 (L2) IAW ALERTS.
- 90% critical MOS fill: 7566, 6173, 6019, 6323, 6153, 6531, 6113, 6012, 6016, 6017, 6018, 7577, 6177, 7547.

Equipment:

- 70% Mission Capable aircraft with the associated aircraft survivability equipment, mission systems and mission sets required to conduct the MET. (11/8/5/4/2 CH-53E aircraft)
- Operational support equipment fully supports MCT

Advanced Training Standard (CMMR):

- 6/5/3/2/2 Crews NS LLL Core Skill Proficient
- 6/5/3/2/2 Crews GTR Core Skill Proficient
- 6/5/3/2/2 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):

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

CH-53E	
STAGE/SKILL ABBREVIATIONS	
CORE SKILLS (2000 Phase)	
ABBREVIATION	DESCRIPTION
ACAD	Academics
FAM/INST	Familiarization / Instrument
INT	Internal Loading
FORM	Formation
CAL	Confined Area Landing
TERF	Terrain Flight
EXT	External Operations
HAAR	Aerial Refueling
FCLP	Field Carrier Landing Practice
AG	Aerial Gunnery
GAUAG	GAU-21 Aerial Gunnery
GTR	Ground Threat Reaction
TAC	Tactics
NS HLL	Night Systems High Light Level
NS LLL	Night Systems Low Light Level
MISSION SKILLS (3000 Phase)	
ABBREVIATION	DESCRIPTION
AT	Assault Transport
AD	Heavy Rotary Wing Aerial Delivery
TRAP	Tactical Recovery of Aircraft and Personnel
AE	Air Evacuation
CORE PLUS SKILLS (4000 Phase)	
ABBREVIATION	DESCRIPTION
HIE	Helicopter Insertion Extraction
BI	Provide Aviation Delivered Battlefield Illumination
TERF EXT	Terrain Flight External
GTR	Ground Threat Reaction
DM	Defensive Measures
CBRN	Chemical, Biological, Radiological and Nuclear
MTG	Moving Target Gunnery
TG	Tail Gunnery
CQ	Carrier Qualification
TAC	Tactics
MISSION PLUS SKILLS (4000 Phase)	
ABBREVIATION	DESCRIPTION
RIE	Raid Insertion/Extraction
ADGR	Aviation-Delivered Ground Refueling
SEA	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.

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APPENDIX C
Readiness Supplements
Squadron 16 Aircraft

HMH CH-53ESquadron 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 AO/G	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(LL),MSP*	MSP	NSQ(LL),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(LL),MSP*	MSP	NSQ(LL),MSP*	16	70%	11												
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and	15	7	4	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	16	70%	11												
MCT 6.2.2	AE	Conduct Air Evacuation	21	11	7	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	16	70%	11												
CORE PLUS																								
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	21	6	4	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	16	70%	11												
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	4	6	4	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),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(LL),MSP*	MSP	NSQ(LL),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						
Critical MOS fill: 7566,6173,6019,6323,6153,6531,6113,6012,6016,6017,6018,7547,7577,6177.																								

Temp Squadron
12 Aircraft

HMH CH-53E Temp Squadron 12 Aircraft																															
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD {SORTIES}	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT																		
				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(LL),MSP*	MSP	NSQ(LL),MSP*	12	70%	8	16	30	26	26	27	9	12	6	4	3	2								
MCT 4.3.4	AD	Conduct Air Delivery	16	9	6	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	12	70%	8																			
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and	13	6	4	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	12	70%	8																			
MCT 6.2.2	AE	Conduct Air Evacuation	16	9	6	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	12	70%	8																			
CORE PLUS																															
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	16	5	3	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	12	70%	8																			
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	2	5	3	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),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(LL),MSP*	MSP	NSQ(LL),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		
Critical MOS fill: 7566,6173,6019,6323,6153,6531,6113,6012,6016,6017,6018,7547,7577,6177.																															

Temp Squadron(-)

8 Aircraft

HMH CH-53E Temp Squadron(-) 8 Aircraft

HMH CH-53E Temp Squadron (-) 8 Aircraft																								
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD {SORTIES}	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT					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(LL),MSP*	MSP	NSQ(LL),MSP*	8	70%	5	12	22	20	20	19	6	8	5	3	2	1	
MCT 4.3.4	AD	Conduct Air Delivery	12	6	4	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	8	70%	5												
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and	9	4	2	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	8	70%	5												
MCT 6.2.2	AE	Conduct Air Evacuation	12	6	4	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	8	70%	5												
CORE PLUS																								
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	12	3	2	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	8	70%	5												
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	2	3	2	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),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(LL),MSP*	MSP	NSQ(LL),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						
Critical MOS fill: 7566,6173,6019,6323,6153,6531,6113,6012,6016,6017,6018,7547,7577,6177.																								

19 Sep 2019

Detachment

4 Aircraft

HMH CH-53E Detachment 4 Aircraft																							
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD (SORTIES)	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT										
				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	3	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 and	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					
Critical MOS fill: 7566,6173,6019,6323,6153,6531,6113,6012,6016,6017,6018,7547,7577,6177.																							

Reserves

6 Aircraft

HMH CH-53E Reserves 6 Aircraft																								
MISSION ESSENTIAL TASK (MET)	MISSION SKILL	DESCRIPTION	DAILY OUTPUT STANDARD {SORTIES}	CREWS TRAINED						AIRCRAFT MAINTENANCE			COLLECTIVE MAX DAILY SORTIE OUTPUT					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	8	4	2	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4	8	19	13	13	17	4	6	3	2	2	1	
MCT 4.3.4	AD	Conduct Air Delivery	8	4	2	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4												
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and	8	2	1	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4												
MCT 6.2.2	AE	Conduct Air Evacuation	8	4	2	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4												
CORE PLUS																								
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	8	2	1	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4												
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling	2	2	1	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4												
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites	8	2	1	HAC,MSP	NSQ(LL),MSP*	MSP	NSQ(LL),MSP*	6	70%	4												
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						
Critical MOS fill: 7566,6173,6019,6323,6153,6531,6113,6012,6016,6017,6018,7547,7577,6177.																								

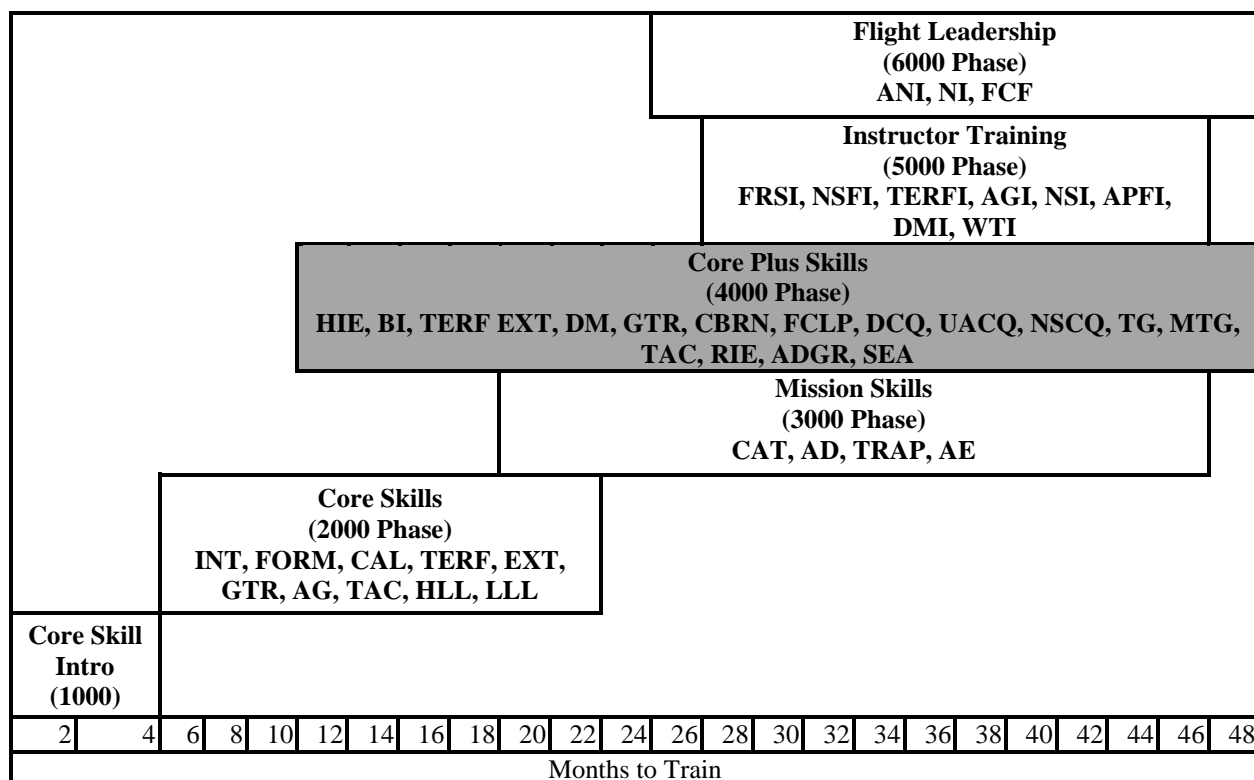
CHAPTER 3
CH-53 CREW CHIEF (MOS 6173)

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CHAPTER 3
CH-53E 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, 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, Conversion, and Transition POI: Crew Chiefs assigned to Basic (B), Conversion (C), and Transition (T) POIs shall fly the entire Basic (B) POI.

3.2.2 Basic POI

CH-53E CREW CHIEF Basic POI		
Months	Phase of Instruction	Unit
4	Crew Chief	HMHT-302
18	Core Skill Training	Tactical Squadron
28	Mission Skill Training	Tactical Squadron

3.2.3 Refresher POI

CH-53E CREW CHIEF Refresher POI		
Months	Phase of Instruction	Unit
2	Core Skill Training	Tactical Squadron
3	Mission Skill Training	Tactical Squadron

3.2.4 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 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/CP by initial POI assignment are re-assigned to the M POI to maintain proficiency.
*Transition and Conversion Crew Chiefs shall be assigned to the Basic POI.		

3.2.6 Fleet Replacement Instructor FRSI POI

CH-53E 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, and Defensive Measures).

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 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.

3.4 REQUIREMENT, 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.

3.4.1 Individual Qualification Requirements

CH-53E CREW CHIEF 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
CC FRS NSQ	5107, 2120, 2220, 2221
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

3.4.2 Individual Designation Requirements

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	5902, 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 Manual
A1-H53BE-NFM-000	CH-53E 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-H53BE-CLG-000	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 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/CP by initial POI assignment are re-assigned to the M POI to maintain proficiency.
Note -Transition and Conversion Crew Chiefs shall be assigned to the Basic POI.		

3.5.7 Re-Qualification (TERFQ, AGQ, DCQ, NSCQ, UACQ, 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), 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 maintained by MAWTS-1 and are located at the following link:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

Scroll down to the "CH-53 Library", click on "Pilot Training Officer References" > "APR and ATF Product Templates" > "Crew Chief Aircrew Training Forms".

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.

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.

3.5.11 Secondary AMOS Crew Chief

All efforts shall be made with MMEA-84 to receive assignment of primary MOS CCs prior to utilizing secondary AMOS program. If inventory shortages cannot be filled through MMEA-84, authorization is granted to individual unit CO's to train secondary AMOS 6173 under the following guidelines:

The number of secondary MOS CCs that an individual unit Commander may train is limited to the current staffing formula; $1.6 \text{ CC} \times \text{primary assigned aircraft (PAA)} = \text{number of CCs minus primary/additional MOS CCs on hand}$. For example, if a squadron has 14 primary/additional MOS CCs assigned, and the staffing formula computes to 19 total CCs, unit commanders may only request to train a maximum of 5 secondary AMOS CCs to equal PAA.

To ensure standardization of training and aviation adaptability, all requested trainees shall be designated an aerial observer prior to starting secondary AMOS training.

The source population shall be restricted to aviation maintenance MOS of 6113, 6153, and 6323 only. All requests shall be submitted via naval message format to CG TECOM ASB (C4610) for approval prior to trainee starting flight syllabus. MSG shall include:

- Organization requesting training of secondary AMOS CC.
- Name, rank, MOS, and EDIPI of trainee.
- Total number of CCs rated by PAA.
- Total number of primary and secondary AMOS CCs assigned to requesting MCC.
- Adequate justification for training a secondary AMOS CC.
- Faxed copy of initial AG/O NATOPS evaluation report (CNAF M-3710.7 form).

Upon receipt of request, ASB will approve/disapprove request via ASL/ASM and notify requesting command through AMHS format. Approved training will be conducted in strict compliance with this manual and MCO P1200.7 Military Occupational Specialties manual. Additional requirements are outlined below:

All Secondary AMOS Crew Chiefs shall be assigned to fly the Refresher POI for all previously held qualifications or completed stages of training for Core Skill, Mission Skill, Core Plus / Mission Plus Skill flights. If a stage of training was not previously completed as an Aerial Observer the newly assigned AMOS Crew Chief will be assigned to the Basic POI. All flights must be flown with CCUI acting in the capacity of a CC.

To ensure MOS standardization all Core Skill Introduction (1000 phase) events shall be flown with a current enlisted Weapons and Tactics Instructor (MOS 6177) or NATOPS Evaluator/Instructor holding a primary MOS of 6173. Only a currently assigned and designated FRSI CC instructor (FRSI) shall administer the Core Skill Introduction evaluation flight.

The Total Time to Train (TTT) secondary AMOS CCs shall not exceed 6 months. The date of initial flight and completion of evaluation flight define the TTT.

Only the FRS CO's have the authority to designate the secondary AMOS of 6173. The evaluation flight may be flown at the respective FRS or individual requesting squadron. Requesting commands shall coordinate with FRS for scheduling of the evaluation flight. TAD funding for either the trainee or FRSI CC shall be the responsibility of the requesting squadron.

The FRSI CC shall administer the closed book NATOPS examination, oral exam, and Core Skill Introduction evaluation flight. Prior to Core Skill Introduction evaluation flight parent commands shall ensure:

- Nominee's complete squadron approved open book NATOPS examination.
- Nominees are designated a plane captain by unit CO.
- Prior to designation, nominees shall attend SERE training.

Upon completion of Core Skill Introduction evaluation flight, copies of all certifications and evaluations shall be submitted to respective FRS CO's for secondary AMOS certification/approval. Documents to be submitted are:

- Copy of current flight physical.
- Copy of physiology/water survival form 3760/32.
- Copy of all CC 1000 phase ATF's.
- Copy of current flight orders.
- Copy of section III(c), examination record, OPNAV 3760/32G.
- Copy of current Plane Captain Designation.
- Copy of initial AG/O evaluation form, OPNAV 3710/7.
- Original CC evaluation form, OPNAV 3710/7.
- Copy of SERE completion certificate.

Marines listed as an instructor on 1000 phase ATFs must submit a copy of respective WTI certificate or NATOPS Evaluator/Instructor designation. The primary purpose of this documentation is to assist the

model manager in tracking the certification process and identifies positive/negative trends in the training process. Evaluation standards applicable to primary MOS CCs shall be strictly adhered to. The FRSI CC shall forward original OPNAV 3710/7 form to FRS CO for approval. The FRS CO shall sign the NATOPS evaluation and a CC designation letter and forward to the originating command for insertion into trainees NATOPS jacket.

In order to facilitate management of the MOS end strengths, secondary AMOS CCs desiring a primary 6173 MOS, will forward the appropriate AA form to MMEA-6 requesting a lateral move from a secondary AMOS CC to a primary MOS CC.

On hand primary designated MOS CC shall have priority for crewmember flight orders IAW MCO 1326.2. This policy applies to Marines currently in training and is effective immediately. This is not applicable to Marines designated prior to this revision, or Marines currently assigned to the executive flight detachment of HMX-1.

Refer to DMS R CG TECOM ASB 141412Z APR 05 for helicopter additional MOS Crew Chief training program message.

POC for secondary AMOS Crew Chief training program is TECOM ASB

3.6 CORE INTRODUCTION PHASE (0000) ACADEMIC SYLLABUS

CORE INTRODUCTION PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
COMPUTER BASED TRAINING (CBT)	3.6.1	3-11
ACADEMICS (ACAD)	3.6.2	3-15
LAB TRAINING (LAB)	3.6.3	3-25
INSTRUCTOR (FRSI)	3.6.4	3-32
EVALUATION (EVAL)	3.6.5	3-34

ACADEMICS STAGE OVERVIEW

ACADEMICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	CORE INTRODUCTION (0000) CH-53E CBT STAGE
CBT-0100		*	B		G		(U) CH-53E HISTORY
CBT-0101		*	B		G		(U) CH-53E PUBLICATIONS
CBT-0102		*	B		G		(U) FAMILIARIZATION (INTERIOR)
CBT-0103		*	B		G		(U) FAMILIARIZATION (EXTERIOR)
CBT-0104		*	B		G		(U) APP OPERATION
CBT-0105		*	B		G		(U) BLADE/PYLON FOLD & SPREAD
CBT-0106		*	B		G		(U) EMERGENCY PROCEDURES
CBT-0107		*	B		G		(U) TAXI/TAKEOFF/IN-FLIGHT CHECKS & PROCEDURES
CBT-0108		*	B		G		(U) INTERNAL CARGO HANDLING
CBT-0109		*	B		G		(U) SINGLE AND DUAL POINT EXTERNAL LIFT
CBT-0110		*	B		G		(U) BEARING MONITOR SYSTEM
CBT-0111		*	B		G		(U) INTRO TO THE IMDS
CBT-0112		*	B		G		(U) INTRO TO THE IMDS FLIGHT SYSTEMS
CH-53E ACADEMICS STAGE							
ACAD-0200		*	B		G		(U) INTRODUCTION TO THE COURSE
ACAD-0201		*	B		G		(U) SAFETY PROCEDURES
ACAD-0202		*	B		G		(U) GROUND HANDLING PROCEDURES
ACAD-0203		*	B		G		(U) DAILY INSPECTION (INTERIOR)
ACAD-0204		*	B		G		(U) DAILY INSPECTION (E-BAYS)
ACAD-0205		*	B		G		(U) DAILY INSPECTION (LANDING GEAR)
ACAD-0206		*	B		G		(U) DAILY INSPECTION (REFUEL PANEL/AUX TANKS/FUSELAGE & SPONSON)
ACAD-0207		*	B		G		(U) DAILY INSPECTION (ENG/NGB & EAPS)
ACAD-0208		*	B		G		(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON)
ACAD-0209		*	B		G		(U) DAILY INSPECTION (TDS & DISCONNECT)
ACAD-0210		*	B		G		(U) DAILY INSPECTION (TL SKID/IGB/TGB/PYLON/STABILIZER/ TL RTR SERVO)

ACAD-0211		*	B		G	(U) DAILY INSPECTION (TRB & TRH)
ACAD-0212		*	B		G	(U) DAILY INSPECTION (MGB, PRIMARY SERVO, & FLIGHT CONTROL)
ACAD-0213		*	B		G	(U) DAILY INSPECTION (2 ND STAGE/UTILITY & ENG START HYD SYSTEMS)
ACAD-0214		*	B		G	(U) DAILY INSPECTION (AGB/APP COMPARTMENT)
ACAD-0215		*	B		G	(U) DAILY INSPECTION (MRH & MRB)
ACAD-0216		*	B		G	(U) DAILY INSPECTION (MISSION SYSTEMS)
ACAD-0217		*	B		G	(U) TURNAROUND INSPECTION
ACAD-0218		*	B		G	(U) APP START
ACAD-0219		*	B		G	(U) BLADE & PYLON FOLD/SPREAD
ACAD-0220		*	B		G	(U) PLANE CAPTAIN RESPONSIBILITIES
ACAD-0221		*	B		G	(U) EGRESS PROCEDURES
ACAD-0222		*	B		G	(U) AIRCREW RESPONSIBILITIES
ACAD-0223		*	B		G	(U) CRM
ACAD-0224		*	B		G	(U) EXTERNALS
ACAD-0225		*	B		G	(U) TERRAIN FLIGHT (TERF)
CH-53E LAB STAGE						
LAB-0300		*	B		G	(U) GROUND HANDLING PROCEDURES
LAB-0301		*	B		G	(U) DAILY INSPECTION (INTERIOR)
LAB-0302		*	B		G	(U) DAILY INSPECTION (E-BAYS)
LAB-0303		*	B		G	(U) DAILY INSPECTION (LANDING GEAR)
LAB-0304		*	B		G	(U) DAILY INSPECTION (REFUEL PANEL/AUX TANKS/FUSELAGE & SPONSON)
LAB-0305		*	B		G	(U) DAILY INSPECTION (ENG/NGB & EAPS)
LAB-0306		*	B		G	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON)
LAB-0307		*	B		G	(U) DAILY INSPECTION (TDS & DISCONNECT)
LAB-0308		*	B		G	(U) DAILY INSPECTION (TAIL SKID/IGB/TGB/PYLON/STABILIZER/ TL RTR SERVO)
LAB-0309		*	B		G	(U) DAILY INSPECTION (TRB & TRH)TAIL ROTOR HEAD, ROTOR BLADES
LAB-0310		*	B		G	(U) DAILY INSPECTION (MGB, PRIMARY SERVO, & FLIGHT CONTROL
LAB-0311		*	B		G	(U) DAILY INSPECTION (2 ND STG/UTILITY/ ENG ST HYD SYS)
LAB-0312		*	B		G	(U) DAILY INSPECTION (AGB/APP COMPT)
LAB-0313		*	B		G	(U) DAILY INSPECTION (MRH & MRB)
LAB-0314		*	B		G	(U) DAILY INSPECTION (MISSION SYSTEMS)
LAB-0315		*	B		G	(U) TURNAROUND INSPECTION
LAB-0316		*	B		G	(U) APP START
LAB-0317		*	B		G	(U) DAILY INSPECTION
LAB-0318		*	B		G	(U) EGRESS PROCEDURES
LAB-0319		*	B		G	(U) CARGO LOADING PROCEDURES
INSTRUCTOR STAGE (FRSI)						
FRSI-0500		*	B		G	(U) COMPUTER AIDED INSTRUCTION
FRSI-0501		*	B		G	(U) LAB PERIOD OF INSTRUCTION
FRSI-0502		*	B		G	(U) INSTRUCTIONAL SKILLS
FRSI-0503		*	B		G	(U) PERIOD OF INSTRUCTION
EVALUATION STAGE (EVAL)						
EVAL-0600		*	B		G	(U) PLANE CAPTAIN DUTIES
EVAL-0601		*	B		G	(U) PLANE CAPTAIN DUTIES REVIEW

3.6.1 Computer Based Training

Purpose. To provide the CCUI with a basic understanding of CH-53E 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 and provide introduction to associated course publications.

Requirement:

Introduce:

General CH-53 historical information

CH-53 NATOPS manual and related maintenance publications

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of CH-53: Historical information; NATOPS manual and related maintenance publications

Prerequisite: ACAD 0200

External Syllabus Support: Electronic classroom

CBT-0101	1.0	*	B	*	G	CBT
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Goal: Provide the CCUI with the basic knowledge required to navigate the CH-53E publications.

Requirement:

Introduce:

CH-53 NATOPS manual and related maintenance publications

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of CH-53: NATOPS manual and related maintenance publications.

Prerequisite: CBT-0100

External Syllabus Support: Electronic classroom

CBT-0102	1.0	*	B	*	G	CBT
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Goal: Introduce CCUI to the components of the cockpit and cabin interior.

Requirement:

Introduce:

Cabin interior

Cockpit

Cabin emergency equipment

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: Cabin interior, Cockpit, and Cabin emergency equipment.

Prerequisite: CBT 0101

External Syllabus Support: Electronic classroom

Reference: A1-H53CE-GAI-000, A1-H53CE-MRC-200

CBT-0103	1.0	*	B	*	G	CBT
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Goal: Introduce the CCUI to the location of aircraft exterior components, panels and the identification of water lines and butt lines.

Requirement:

Introduce:

Helicopter dimensions

Component locations

Danger areas

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: Helicopter dimensions, Component locations, and Danger areas

Prerequisite: CBT 0102

External Syllabus Support: Electronic classroom

Reference: A1-H53CE-GAI-000

CBT-0104 1.5 * B * G CBT

Goal: Introduce CCUI to the principles of APP operation.

Requirement:

Introduce:

APP safety precautions
Fire bottle procedures
Hand and arm signals
APP Principles of operation

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: APP safety precautions, Fire bottle procedures, Hand and arm signals, and APP operation.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-900, A1-H53CE-220-000

CBT-0105 1.0 * B * G CBT

Goal: Introduce CCUI to the blade 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.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-900, A1-H53CE-GAI-000

CBT 0106 1.0 * B * G CBT

Goal: Introduce Emergency Procedures (EPs) to the CCUI

Requirement:

Introduce:

Fire EPs
Smoke/Fumes EPs
Bearing Monitor System EPs
Emergency landing
Landing gear system failure

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: Fire, Smoke/Fumes, Bearing monitor system, Emergency landing, and Landing gear system failure.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-000, A1-H53BE-NFM-900

CBT 0107 1.0 * B * 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, and in-flight checklists

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: Hand and arm signals, aircraft clearance, Pre-taxi, take off, and in-flight checklists.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-000, A1-H53BE-NFM-900

CBT 0108	1.0	*	B	*	G	CBT
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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
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, Winch operation and procedures, Cargo ramp and flippers operations and procedures.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-CLG-000

CBT 0109	1.0	*	B	*	G	CBT
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Goal: Introduce the CCUI single and dual point external operating procedures.

Requirement:

Introduce:

Standard terminology
Safety procedures
Single and dual point hook checks

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: Standard terminology, safety procedures, and hook checks.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-000, A1-H53BE-NFM-900

CBT 0110	1.0	*	B	*	G	CBT
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Goal: Familiarize the CCUI with the basic function of the Bearing Monitor System (BMS).

Requirement:

Introduce:

Component location
System operation

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of BMS: Component location and system operation.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-000, A1-H53BE-NFM-900, A1-H53CE-VIB-000

CBT 0111 1.0 * B * G CBT

Goal: Familiarize the CCUI with the basic function of the integrated maintenance diagnostic system (IMDS).

Requirement:

Introduce:

Theory of operation

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of IMDS: Theory of operation.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-000, A1-H53BE-NFM-900

CBT 0112 1.0 * B * G CBT

Goal: Familiarize the CCUI with the basic function of the integrated maintenance diagnostic system for flight operations.

Requirement:

Introduce:

System operation

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of IMDS: System operation.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

Reference: A1-H53BE-NFM-000, A1-H53BE-NFM-900

3.6.2 Academic Training

Purpose: To provide the CCUI with a basic understanding of the procedures required to perform a CH-53E 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

ACAD 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 School 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

ACAD 0201	1.5	*	B	*	G	CLSRM
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Goal: The CCUI understands the safety considerations for operations on the flightline and one 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: A1-H53CE-GAI-000, A1-H53BE-NFM-000

ACAD 0202	1.5	*	B	*	G	CLSRM
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Goal: The CCUI understands the procedures, common terminology and hand and arm signals for promoting good safety during all facets of training, both in the air and on the ground. Be familiar with basic ground handling and aircraft movement procedures and safety protocols.

Requirement:

Discuss:

- Training time out (TTO)
- Drop on Request (DOR)
- “Knock it off”
- Ground handling procedures
- Fire extinguisher safety considerations
- Aircraft movement

Required personnel and positions during aircraft movement
Basic hand and arm signals
All five safety provisions installed or complied with

Performance Standard: CCUI is responsible for knowledge of procedures required for: Training time out (TTO), Drop on Request (DOR), “Knock it off”, Ground handling procedures, Fire extinguisher safety considerations, Aircraft movement, required personnel and positions during aircraft movement, Basic hand and arm signals, and all five safety provisions installed or complied with.

Prerequisite: CBT 0103

Reference: A1-H53CE-GAI-000, A1-H53BE-NFM-000

ACAD 0203 1.0 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, Theory of Operation and Daily inspection criteria for the aircraft interior.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Cockpit section
Pilot and Copilot seats
Cabin section

Performance Standard: CCUI is responsible for knowledge of nomenclature, Theory of Operation, and procedures required to perform a daily inspection of: Cockpit section, Pilot and Copilot seats and Cabin section.

Prerequisite: ACAD-0201, ACAD-0202

Reference: A1-H53CE-MRC-200
A1-H53CE-570-100
A1-H53CE-600-100
A1-H53CE-700-100
A1-H53CE-760-100
A1-H53CE-500-100

ACAD 0204 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the electronics compartments, Countermeasure systems, Spot lights, and FLIR Ball and boom.

Requirement:

Discuss: nomenclature, theories of operation and inspection criteria of:

Right electronics compartment
Nose electronics compartment
Left side electronics compartments
Countermeasure systems
Spot lights
FLIR Ball and boom

Performance Standard: CCUI is responsible for knowledge of nomenclature, Theory of Operation, and procedures required to perform a daily inspection of: Right electronics compartment, Nose electronics compartment, Left side electronics compartments, Countermeasure systems, Spot lights, FLIR Ball and boom.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-570-100
A1-H53CE-600-100
A1-H53CE-700-100
A1-H53CE-760-100

A1-H53CE-500-100

ACAD 0205 1.0 * B * 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:

Nomenclature, theories of operation and inspection criteria of:

- Nose gear door
- Nose landing gear
- Pitot static drain lines
- Emergency landing gear extension cable
- Cargo release linkage
- Pilot and Copilot moveable spotlight
- Main Landing Gear (MLG)
- MLG brake assembly
- Landing gear servicing

Performance Standard: CCUI is responsible for knowledge of nomenclature, Theory of Operation, and procedures required to perform a daily inspection of: Nose gear door, Nose landing gear, Pitot static drain lines, Emergency landing gear extension cable, Cargo release linkage, Pilot and Copilot moveable spotlight, Main Landing Gear (MLG), MLG brake assembly, and Landing gear servicing.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200, A1-H53CE-130-100

ACAD 0206 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the refuel panel, aux tanks, and pylons to include sponsons and left and right fuselage.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

- Aerial refueling probe
- Pressure refueling panel
- Auxiliary fuel tank and pylon assembly
- Auxiliary fuel tank support
- Sponson
- Fuselage

Performance Standard: CCUI is responsible for knowledge of nomenclature, Theory of Operation, and procedures required to perform a daily inspection of: Aerial refueling probe, Pressure refueling panel, Auxiliary fuel tank and pylon assembly, Auxiliary fuel tank support, Sponson, and Fuselage.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-110-100
A1-H53CE-460-100

ACAD 0207 1.5 * B * 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 EAPS.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Engine
EAPS
NGB

Performance Standard: CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: Engine, EAPS, and NGB.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-220-100

ACAD 0208 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the aft main rotor pylon.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Aft main rotor pylon

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: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-110-100

ACAD 0209 1.0 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the tail drive shafts and disconnect coupling.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Tail driveshaft viscous damper assemblies
Disconnect coupling
Cleaning and greasing:
Disconnect coupling

Performance Standard: a) CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: tail driveshaft viscous damper assemblies and disconnect coupling.

b) CCUI is responsible for understanding procedures required to clean and grease the disconnect coupling.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-260-100

ACAD 0210 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the Tail skid, Intermediate gearbox, Tail gearbox, tail rotor servo, and Tail pylon and stabilizer structure.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Tail pylon and stabilizer structure

Tail gearbox

Intermediate gearbox

Tail skid

Tail rotor servo

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, tail gearbox, intermediate gearbox, tail skid, and tail rotor servo.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-260-100

ACAD 0211 1.0 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the tail rotor head and tail rotor blades.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Tail rotor head

Tail rotor blades

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 rotor blades.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-150-100

ACAD 0212 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the Main gearbox, Main rotor primary servo cylinders and control rods, and Flight control mixer unit.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Main gearbox

Main rotor primary servo cylinders and control rods

Flight control mixer unit

Performance Standard: CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: main gearbox, main rotor primary servo cylinders and control rods, and flight control mixer unit.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200
A1-H53CE-260-100
A1-H53CE-140-100

ACAD 0213 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the 2nd stage and utility hydraulic systems and engine start hydraulic components.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

- 2nd stage hydraulic system
- Utility hydraulic system
- Engine start hydraulic components
- Servicing:
 - Hydraulic systems

Performance Standard: CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: 2nd stage hydraulic system, utility hydraulic system, and engine start hydraulic components.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200

A1-H53CE-400-100

ACAD 0214 1.5 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the forward hydraulic and auxiliary power plant compartment and discuss the inspection criteria for all components.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

- Accessory gearbox
- Auxiliary power plant
- Fire extinguishers
- Heater
- Rotor head light
- Access panels

Performance Standard: CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: accessory gearbox, auxiliary power plant, fire extinguishers, heater, rotor head light, and access panels.

Prerequisite: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200

A1-H53CE-400-100

A1-H53CE-110-100

A1-H53CE-260-100

ACAD 0215 1.0 * B * 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: Nomenclature, theories of operation and inspection criteria of:

- Main rotor head
- Main rotor blades

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: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200

A1-H53CE-150-100

ACAD 0216 1.0 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and Daily inspection criteria for the mission systems.

Requirement:

Discuss: Nomenclature, theories of operation and inspection criteria of:

Single-point cargo hook and pendant

Two-point suspension system

Dual point cargo pendant

Aircrew portable pendant control

Single-point cargo system operational check and hook jettison test

Two point cargo system

CG/hook load indicating system operational checks

Operational check of cargo winch

Operational check of utility hoist

Ensuring proper aircraft configuration

Performance Standard: a) CCUI is responsible for knowledge of nomenclature, theory of operation, and procedures required to perform a daily inspection of: single-point cargo hook and pendant, two-point suspension system, dual point cargo pendant, and aircrew portable pendant control

b) CCUI is responsible for knowledge of procedures required to perform operation of: single-point cargo system operational check and hook jettison test, two point cargo system and CG/hook load indicating system operational checks, operational check of cargo winch, and operational check of utility hoist.

c) CCUI is responsible for understanding procedures required to ensure proper aircraft configuration.

Prerequisite: ACAD 0201, ACAD 0202, CBT 0108, CBT 0109

Reference: A1-H53CE-MRC-200

A1-H53CE-110-100

ACAD-0217 1.0 * B * 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: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200

ACAD-0218 1.0 * B * G CLSRM

Goal: Familiarize the CCUI with the procedures APP operation.

Requirement:

Discuss:

- APP preflight/inspection
- Cockpit preflight/inspection
- Safety precautions
- Fire bottle procedures
- Hand and arm signals
- APP operation

Performance Standard: CCUI is responsible for knowledge of procedures required to perform: APP preflight/inspection, cockpit preflight/inspection, safety precautions, fire bottle procedures, hand and arm signals, and APP operation.

Prerequisite: CBT 0104, ACAD 0201, ACAD 0202

Reference: A1-H53CE-220-100

A1-H53CE-MRC-200

A1-H53BE-NFM-000

ACAD-0219 1.0 * B * G CLSRM

Goal: Familiarize CCUI with the nomenclature, theory of operation and procedures for blade fold and spread and the pylon fold and spread.

Requirement:

Discuss: Nomenclature, theories of operation and procedures for:

- Safety considerations
- Blade fold procedures
- Blade spread procedures
- Pylon fold procedures
- Pylon spread procedures

Performance Standard: CCUI is responsible for knowledge of nomenclature, Theories of Operation, and procedures for: safety considerations, blade fold procedures, blade spread procedures, pylon fold procedures, and pylon spread procedures.

Prerequisite: CBT 0105, ACAD 0202

Reference: A1-H53CE-GAI-000

A1-H53BE-NFM-000

ACAD-0220 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

ACAD-0221 4.0 * B * G CLSRM

Goal: Familiarize the CCUI with the proper CH-53E egress procedures.

Requirement:

Discuss:

- Water egress procedures
- Proper egress procedures
- CH-53E egress points

Performance Standard: CCUI is responsible for knowledge of: water egress procedures, proper egress procedures, and CH-53E egress points.

Prerequisite: ACAD 0201

Reference: A1-H53BE-NFM-000

ACAD-0222 3.5 * B * G CLSRM

Goal: Introduce aircrew responsibilities.

Requirement:

Discuss:

- Flight schedules
- Flight equipment
- Preflight Inspection
- Aircraft turn-up/shut down
- Standard Terminology
- NATOPS briefing
- Confined Area Landings (CALs)
- Pressure refueling
- Aircraft Tie down & post flight inspection

Performance Standard: CCUI is responsible for knowledge of: flight schedules, flight equipment, pre-flight inspection, aircraft turn-up/shutdown, standard terminology, NATOPS briefing, CALs, pressure refueling, aircraft tie down & post flight inspection.

Prerequisite: ACAD 0201, ACAD 0202, CBT 0107

Reference: A1-H53BE-NFM-000

A1-H53BE-NFM-900

ACAD-0223 2.5 * B * G CLSRM

Goal: Introduce Crew Resource Management (CRM).

Requirement:

Discuss:

- Decision making
- Assertiveness
- Mission Analysis
- Communication
- Leadership
- Adaptability/Flexibility
- Situational Awareness
- Case Study

LAB-0300 2.5 * B * 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
Radioactive components
Engine exhaust danger areas
Fire bottle considerations during APP 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, radioactive components, engine exhaust danger areas, and fire bottle considerations during APP 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: ACAD 0201, ACAD 0202

Reference: A1-H53CE-MRC-200

A1-H53CE-GAI-000

A1-H53BE-NFM-000

LAB-0301 2.5 * B * 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
Cabin Section

Performance Standard: CCUI is responsible for performing procedures required to inspect: cockpit section, pilot and co-pilot seats, and cabin section.

Prerequisite: ACAD 0203

Reference: A1-H53CE-MRC-200

LAB-0302 1.5 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the electronics compartments, Countermeasure systems, and FLIR ball and boom.

Requirement:

Introduce Inspection of:

Right electronics compartment
Nose electronics compartment
Left side electronics compartments

Countermeasures systems
Spot Light
FLIR Ball and boom

Performance Standard: CCUI is responsible for performing procedures required to inspect: right electronics compartment, nose electronics compartment, left side electronics compartments, countermeasures systems, spot light, and FLIR Ball and boom.

Prerequisite: ACAD 0204

Reference: A1-H53CE-MRC-200

LAB-0303 1.5 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the landing gear and associated components.

Requirement:

Introduce Inspection of:

Nose gear door
Nose landing gear
Pitot static drain lines
Emergency landing gear extension cable
Cargo release linkage
Pilot and Copilot moveable spotlight
Main Landing Gear (MLG)
MLG brake assembly
Landing gear servicing

Performance Standard: a) CCUI is responsible for performing procedures required to inspect: nose gear door, nose landing gear, pitot static drain lines, emergency landing gear extension cable, cargo release linkage, pilot and Copilot moveable spotlight, main Landing Gear (MLG), and MLG brake assembly.

b) CCUI is responsible for knowledge of: landing gear servicing.

Prerequisite: ACAD 0205

Reference: A1-H53CE-MRC-200

LAB-0304 1.0 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the refueling panel, auxiliary fuel tank and pylons assemblies, sponsons, and aircraft fuselage.

Requirement:

Introduce Inspection of:

Aerial refueling probe
Pressure refueling panel
Auxiliary fuel tank and pylon assembly
Auxiliary fuel tank support
Sponson
Fuselage

Performance Standard: CCUI is responsible for performing procedures required to inspect: aerial refueling probe, pressure refueling panel, auxiliary fuel tank and pylon assembly, auxiliary fuel tank support, sponson, and fuselage.

Prerequisite: ACAD 0206

Reference: A1-H53CE-MRC-200

LAB-0305	2.0	*	B	*	G	S/A
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Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the engines, nose gear boxes and EAPS.

Requirement:

Introduce Inspection of:

Engine
EAPS
NGB

Performance Standard: CCUI is responsible for performing procedures required to inspect: engine, EAPS, and NGB.

Prerequisite: ACAD 0207

Reference: A1-H53CE-MRC-200

LAB-0306	1.5	*	B	*	G	S/A
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Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the aft main rotor pylon.

Requirement:

Introduce Inspection of:

Aft main rotor pylon

Performance Standard: CCUI is responsible for performing procedures required to inspect: aft main rotor pylon.

Prerequisite: ACAD 0208

Reference: A1-H53CE-MRC-200

LAB-0307	1.0	*	B	*	G	S/A
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Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the drive shafts and disconnect coupling components.

Requirement:

Introduce Inspection of:

Tail driveshaft viscous damper assemblies
Disconnect coupling for wear
Introduce cleaning and greasing:
Disconnect coupling

Performance Standard: a) CCUI is responsible for performing procedures required to inspect: tail driveshaft viscous damper assemblies and disconnect coupling for wear.

b) CCUI is responsible for performing procedures required to: clean and grease disconnect coupling.

Prerequisite: ACAD 0209

Reference: A1-H53CE-MRC-200

LAB-0308	1.5	*	B	*	G	S/A
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Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the tail skid, IGB, TGB, pylon, stabilizer, and tail rotor servo.

Requirement:

Introduce Inspection of:

Tail pylon and stabilizer structure

Tail gearbox
Intermediate gearbox
Tail skid
Tail rotor servo

Performance Standard: CCUI is responsible for performing procedures required to inspect: tail pylon and stabilizer structure, tail gearbox, intermediate gearbox, tail skid, and tail rotor servo.

Prerequisite: ACAD 0210

Reference: A1-H53CE-MRC-200

LAB-0309 1.0 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the tail rotor head and tail rotor blades.

Requirement:

Introduce inspection of:

Tail rotor head
Tail rotor blades

Performance Standard: CCUI is responsible for performing procedures required to inspect: tail rotor head and tail rotor blades.

Prerequisite: ACAD 0211

Reference: A1-H53CE-MRC-200

LAB-0310 1.5 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the Main gearbox, Main rotor primary servo cylinders and control rods, and Flight control mixer unit.

Requirement:

Introduce Inspection of:

Main gearbox
Main rotor primary servo cylinders and control rods
Flight control mixer unit

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: ACAD 0212

Reference: A1-H53CE-MRC-200

LAB-0311 1.5 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the 2nd stage and utility hydraulic systems and engine start hydraulic components.

Requirement:

Introduce: Inspection of:

2nd stage hydraulic system
Utility hydraulic system
Engine start hydraulic components
Servicing hydraulic systems

Performance Standard: a) CCUI is responsible for performing procedures required to inspect: 2nd stage hydraulic system, utility hydraulic system, and engine start hydraulic components.

b) CCUI is responsible for performing procedures required to service hydraulic systems.

Prerequisite: ACAD 0213

Reference: A1-H53CE-MRC-200

LAB-0312	1.5	*	B	*	G	S/A
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Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the forward hydraulic & APP compartment, and associated components.

Requirement:

Introduce: Inspection of:

- Accessory gearbox
- Auxiliary power plant
- Fire extinguishers
- Heater
- Rotor head light
- Access panels

Performance Standard: CCUI is responsible for performing procedures required to inspect; accessory gearbox, auxiliary power plant, fire extinguishers, heater, rotor head light and access panels.

Prerequisite: ACAD 0214

Reference: A1-H53CE-MRC-200

LAB-0313	1.5	*	B	*	G	S/A
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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
- Main rotor blades

Performance Standard: CCUI is responsible for performing procedures required to inspect: main rotor head, and main rotor blades.

Prerequisite: ACAD 0215

Reference: A1-H53CE-MRC-200

LAB-0314	1.5	*	B	*	G	S/A
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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:

- Single-point cargo hook and pendant
- Two-point suspension system
- Dual point cargo pendant
- Aircrew portable pendant control

Introduce performing:

- Single-point cargo system operational check and hook jettison test

Two point cargo system and CG/hook load indicating system operational checks
Operational check of cargo winch
Operational check of utility hoist

Demonstrate:

Ensuring proper aircraft configuration

Performance Standard: a) CCUI is responsible for performing procedures required to inspect: single-point cargo hook and pendant, two-point suspension system, dual point cargo pendant, and aircrew portable pendant control.

b) CCUI is responsible for performing: single-point cargo system operational check and hook jettison test, two point cargo system and CG/hook load indicating system operational checks, operational check of cargo winch, and operational check of utility hoist.

c) CCUI is responsible for ensuring proper aircraft configuration.

Prerequisite: ACAD 0216

Reference: A1-H53CE-MRC-200

LAB-0315 1.5 * B * 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: ACAD 0217

External Syllabus Support: Fuel sample trainer

Reference: A1-H53CE-MRC-100

LAB-0316 1.0 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required for APP operation.

Requirement:

Introduce:

APP compartment preflight/inspection
Cockpit preflight/inspection
Safety precautions
Fire bottle procedures
Hand and arm signals
APP operation

Performance Standard: a) CCUI is responsible for following applicable safety precautions.

b) CCUI is responsible for performing: APP compartment preflight/inspection, cockpit preflight/inspection, fire bottle procedures, hand and arm signals, and APP operation.

Prerequisite: ACAD 0218

Reference: A1-H53CE-GAI-000

A1-H53BE-NFM-900

LAB-0317 4.0 * B * G S/A

Goal: Provide the CCUI with the fundamental skills required performing a Daily inspection.

Requirement:

Discuss:

Fundamentals and qualities that make up a plane captain
Plane captain program

Practice:

Performing Daily inspection

Performance Standard: CCUI is responsible for: displaying knowledge of plane captain program, following appropriate safety practices, and performing Daily inspection

Prerequisites: ACAD 0200 thru ACAD 0216

Reference: COMNAVFORINST 4790.2

A1-H53CE-MRC-200

LAB-0318 1.5 * B * G S/A

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: ACAD 0221

Reference: A1-H53BE-NFM-000

LAB-0319 3.0 * B * G S/A

Goal: Introduce the CCUI to the practices and duties of aircrew when loading, unloading and securing internal cargo/vehicles and embarking/debarking of passengers and personal gear.

Requirement:

Instructor: FRSI required for all personnel in the Basic (B).

Introduce/Discuss:

CC responsibilities during cargo/ passenger operations
CRM and crew coordination during cargo/ passenger operations
Cabin configuration/security
CG limitations and considerations
Cargo winch operations
Cargo ramp and flipper operations and procedures
Cargo loading, unloading, securing procedures
Palletized vs. Non-palletized cargo
Safety precautions transporting various cargo
Hand and arm signals
Communication with passengers
Emergency passenger egress
Passenger embarking/ debarking procedures
Passenger securing procedures
Personal gear securing procedures
Passenger accountability

NFM-900 Passenger briefing guide

Performance Standards: Conduct various types of cargo/ vehicle and passenger 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 cargo and passenger procedures, and directing simulated vehicle/forklift into the A/C.

External Syllabus Support: Applicable cargo, passengers, personal gear and/or vehicles, applicable support equipment, static CH-53 or approved load trainer.

Prerequisite: CBT- 0108

3.6.4 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 1CLSRM

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

FRSI-0501 2.0 * B * G 1CLSRM

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.

Prerequisite: FRSI 0500

External Syllabus Support: Electronic classroom

Reference: HMT-302 Marine Enlisted Aircrew Training SOP

FRSI-0502 2.0 * B * G 1CLSRM

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.

Prerequisite: FRSI 0501

External Syllabus Support: Electronic classroom

Reference: HMHT-302 Marine Enlisted Aircrew Training SOP

FRSI-0503 2.0 * B * G 1CLSRM

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.

Prerequisite: FRSI 0502

External Syllabus Support: Electronic classroom

Reference: HMT-302 Marine Enlisted Aircrew Training SOP

3.6.5 Evaluation Events

Purpose: To ensure CCUI possess the requisite knowledge and technical skills required perform CH-53 Plane Captain duties.

General: CCUI shall complete these events in conjunction with COMNAVAIRFORINST 4790.2A requirements.

Crew Requirement: CCUI or CC

EVAL-0600	2.0	*	B	*	A	1 CH-53
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Goal: Provide CCUI with the opportunity to demonstrate mastery of CH-53 Plane Captain duties.

Requirement:

Review: CCUIs ability to properly perform:

Daily Inspection

Turnaround inspection

Performance Standard: CCUI is responsible for demonstrating ability to properly perform: daily inspection, and turnaround inspection.

Prerequisite: LAB 0321, LAB 0322

External Syllabus Support: N/A

Reference: A1-H53CE-MRC-200

EVAL-0601	2.0	*	B	*	A	1 CH-53
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Goal: Review Crew Chiefs ability to perform CH-53 Plane Captain duties.

Requirement:

Review: Crew Chief ability to properly perform:

Daily Inspection

Turnaround inspection

Performance Standard: Crew Chief is responsible for demonstrating ability to properly perform: daily inspection, and turnaround inspection.

Prerequisite: EVAL 0600

External Syllabus Support: N/A

Reference: A1-H53CE-MRC-200

3.7 CORE INTRODUCTION PHASE (1000) FLIGHT SYLLABUS

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).

3.7.1 CORE INTRODUCTION FLIGHT PHASE (1000) OVERVIEW

CORE INTRODUCTION PHASE (1000)		
STAGE	PARAGRAPH	PAGE NUMBER
FAMILIARIZATION (FAM)	3.7.2	3-35
NIGHT FAMILIARIZATION (NFAM)	3.7.3	3-38
INTERNAL LOADS	3.7.4	3-39
FORMATION (FORM)	3.7.5	3-41
CONFINED AREA LANDINGS (CAL)	3.7.6	3-42
EXTERNALS (EXT)	3.7.7	3-43
TERRAIN FLIGHT (TERF)	3.7.8	3-46
REVIEW AND CORE SKILL INTRODUCTION EVALUATION	3.7.9	3-46

3.7.2 Familiarization

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/CCI/CCUI

Academic Training: Instructor led classroom instruction on applicable publications and directives. Crew Resource Management class.

FAM-1100 1.5 * B D A 1 CH-53

Goal: Practice aircrew duties part 1

Requirement:

Instructor: FRSI

Discuss:

- Crew Resource Management (CRM) principles
- Immediate dangerous hazards
- Concise recommendations of safety concerns
- Post Auxiliary Power plant (APP) start
- Blade/pylon spread procedures
- Starting engines/rotors checks
- Bearing Monitor System (BMS)
- Auxiliary Power plant (APP)
- Startup safety

Practice:

Crew Resource Management (CRM)
Operational Risk Management (ORM) process
Possible hazards scanning during startup
Startup

Establishing area clear
Possible hazards
Hazards
Bearing Monitor Panel (BMP)

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

External Syllabus Support: Aircrew Procedures Trainer

FAM-1101 1.5 * B D A 1 CH-53

Goal: Practice Aircrew Duties Part 2

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)
Pre-taxi
Taxi
Pre-takeoff
Takeoff duties safety
Concise recommendation of safety concerns
Flight safety

Demonstrate:

Lesson pre-briefing
Training mission brief

Introduce:

Pre-taxi
Taxi
Pre-takeoff
Takeoff duties

Practice:

Starting engines/rotors checks
Starting engines/rotors
Windshield failure
Unusual attitude recovery
Emergency ground egress
Miscellaneous emergency procedure

Review:

Crew Resource Management (CRM)
Operational Risk Management (ORM) process
Post Auxiliary Power plant (APP) start
Blade Inspection Method (BIM) panel

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

Prerequisite: SFAM-1100

FAM-1102 1.5 * B D A 1 CH-53

Goal: Introduce Emergency Procedures

Requirement:

Instructor: FRSI

Discuss:

Smoke and fume elimination

Engine power loss
Engine over speed
Control linkage failure
Power turbine failure
Engine lubrication system malfunction
Power deterioration failure
Engine restart during flight
Electrical fire
Hydraulic fire in main rotor pylon
Primary tandem servo malfunction
Nose Gearbox (NGB) chip locator light
Accessory Gearbox (AGB) chip locator light

Introduce:

Engine compartment fire(s) on the ground
Engine post shutdown fire(s) on ground
Engine/Auxiliary Power plant (APP)/heater compartment fire on ground
Smoke and fume elimination
Engine power loss
Engine over speed
Control linkage failure
Power turbine failure
Power deterioration failure
Engine lubrication system malfunction
Engine restart during flight
Fire
Electrical fire
Hydraulic fire in main rotor pylon
Restriction or binding in the flight controls
Primary tandem servo malfunction
Flight control
Nose Gearbox (NGB) chip locator light
Nose Gearbox (NGB) oil system failure
Accessory Gearbox (AGB) failure
Accessory Gearbox (AGB) chip locator light
Assessor Gearbox (AGB) oil system failure

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

Prerequisite: FAM-1101

FAM-1103 1.5 * B D A 1 CH-53

Goal: Practice Aircrew Duties Part 3

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)
Pre-landing
Landing
Online engine wash
Shutdown safety
Shutdown

Demonstrate:

Control mission systems
In-flight aircraft servicing
Online engine wash procedures

- Possible hazards during shutdown
- Shutdown procedures
- Blade/pylon fold
- Shutdown monitoring procedures
- Shutdown checks

Review:

- Crew Resource Management (CRM)
- Operational Risk Management (ORM) process
- Pre-landing checks
- Landing duties
- Post flight inspection

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

Prerequisite: FAM-1102

FAM-1104	1.5	*	B	D	A	1 CH-53
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Goal: Review Aircrew duties while incorporating Crew Resource Management (CRM).

Requirement:

Instructor: FRSI

Discuss:

- Aircrew duties
- Performing emergency procedures
- Emergency procedure safety

Review:

- Aircrew duties
- Engine emergency procedures
- Bearing Monitor System emergency procedures
- Tail rotor drive system emergency procedures
- Hydraulic system emergency procedures
- Electrical system emergency procedures
- Transmission emergency procedures
- Flight control emergency procedures
- Fuel system emergency procedures
- Landing gear emergency procedures
- Fire emergency procedures
- Emergency landing
- Autorotative landing
- Emergency descent

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

Prerequisite: FAM-1103

External Syllabus Support: Aircrew Emergency Procedures Trainer

3.7.3 Night Familiarization

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 an NSI or NSFI for NFAM-1201 and NFAM-1202.

Crew Requirement: CCI/CCUI

Academic Training: Instructor led classroom instruction on applicable publications and directives.

NFAM-1200 1.5 * B NS A 1 CH-53

Goal: Introduce Night Systems (NS)

Requirement:

Instructor: FRSI and NSFI or NSI

Discuss:

- Crew Resource Management (CRM)
- Night operation safety
- Night Vision Goggles (NVGs)

Introduce:

- Crew Resource Management (CRM)
- Operational Risk Management (ORM)
- NVGs operation
- NVG goggle/de-goggle procedures
- Lookout duties
- Monitoring procedures
- In-flight support duties
- Pre-landing checks
- Possible hazards scanning
- Flight procedures
- Decision making

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

Prerequisite: CAL-1600, Night Imaging and Threat Evaluation (NITE) Lab Instruction

External Syllabus Support: Aircrew Procedures Trainer

NFAM-1201 1.5 * B NS A 1 CH-53

Goal: Practice Night Systems (NS)

Requirement:

Instructor: FRSI and NSFI or NSI

Discuss:

- Crew Resource Management (CRM) principles
- Night operation safety
- NVG operation

Practice:

- Crew Resource Management (CRM)
- Operational Risk Management (ORM) process
- NVG operation
- NVG goggle/de-goggle procedures
- Lookout duties
- Monitoring procedures
- In-flight support duties
- Pre-landing checks
- Scanning for possible hazards
- Flight procedures

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

Prerequisite: NFAM-1200

3.7.4 Internal Loads

Purpose: To introduce aircrew duties associated with loading, securing, and loading of passengers, cargo, and vehicles.

General: Aircrew (CCUI) may fly these events in conjunction with the pilot syllabus. Instructors (CCI) shall be an NSI if Night Systems are utilized.

Crew Requirement: CCI/CCUI

Ground Training Prerequisites: Aircrew must be familiar with the appropriate sections of the NATOPS Flight Manual and Cargo Loading Manual.

INT-1300	1.5	*	B	(N)	A/S	1 CH-53
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Goal: Introduce Cabin/Cargo Configuration/Load Planning

Requirement:

Instructor: FRSI

Discuss:

- Potential safety hazards
- Cargo compartment
- Operation of cabin and loading equipment
- Load planning
- Cargo ramp and door
- Floor-loaded cargo on-load/offload
- Operation of cabin on-load/offload equipment
- Palletized cargo on-load/offload
- Rolling stock cargo on-load/offload procedures

Introduce:

- Cargo compartment
- Cabin and loading equipment
- Cargo preparation and loading
- Load planning
- Load plan
- Cargo ramp and door procedures
- Cargo winch operations
- Cabin on-load/offload equipment
- Floor-loaded cargo on-load/offload procedures
- Palletized cargo on-load/offload procedures
- Rolling stock cargo on-load/offload procedures

Performance Standard: Demonstrate the ability to effectively plan and prepare the cabin for internal cargo. Perform cargo loading and unloading IAW the NTTP 2-22.3-53 and CH-53 NATOPS.

Prerequisite: FAM-1104

External Syllabus Support: Aircrew Cabin Procedures Trainer

INT-1301	1.5	*	B	(N)	A/S	1 CH-53
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Goal: Introduce Internal Passengers/Cargo Operations

Requirement:

Instructor: FRSI

Discuss:

- Crew Resource Management (CRM)
- Troop loading on-load procedures
- Troop offload procedures
- Litter on-load/offload procedures
- On-load/offload safety
- Passenger/personnel on-load/offload procedures
- Post-loading procedures
- Operation of cabin and offloading equipment
- Cargo offload procedures

Introduce:

- Crew Resource Management (CRM)
- Operational Risk Management (ORM)
- Troop loading preparation and loading procedures
- Troop offload
- Litter on-load/offload
- Passenger/personnel on-load/offload
- Post-loading
- Cabin and offloading equipment
- General cargo offload
- Rolling stock cargo on-load/offload procedures

Performance Standard: Demonstrate the ability to effectively plan and prepare the cabin for internal troop transport.
Ensure the safe embark and debark of troops IAW the NTTP 2-22.3-53 and CH-53 NATOPS.

Prerequisite: INT-1300

External Syllabus Support: Aircrew Cabin Procedures Trainer

3.7.5 Formation

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 an NSI for FORM-1501.

Crew Requirement: CCI/CCUI

FORM-1500	2.0	*	B	D	A	2 CH-53
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Goal: Introduce day Formation Flight

Requirement:

Instructor: FRSI

Discuss:

- Crew Resource Management (CRM)
- Formation flight procedures

Introduce:

- Crew Resource Management (CRM)
- Operational Risk Management (ORM)
- Formation flight procedures

Performance Standard: Demonstrate the ability to conduct aircrew duties and demonstrate knowledge of aircrew considerations IAW the above listed items, CH-53 NATOPS, and NTTP 3-22.3-53.

Prerequisite: FAM-1104

FORM-1501 2.0 * B NS A 2 CH-53

Goal: Introduce Night Systems (NS) Formation Flight

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Formation flight procedures

Introduce:

Crew Resource Management (CRM)

Operational Risk Management (ORM)

Formation flight procedures

Performance Standard: Demonstrate the ability to conduct aircrew duties and demonstrate knowledge of aircrew considerations during formation flight utilizing NS IAW the above listed items, CH-53 NATOPS, and NTTP 3-22.3-53.

Prerequisite: NFAM-1201 and FORM-1500

3.7.6 Confined Area Landings

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 an NSI for CAL-1602 and CAL-1603.

Crew Requirement: CCI/CCUI

CAL-1600	1.5	*	B	D	A	1 CH-53
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Goal: Introduce Confined Area Landings (CALs)

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Loss of visual reference during landing

Introduce:

Crew Resource Management (CRM)

Operational Risk Management (ORM)

Loss of visual reference during landing

Confined Area Landings (CALs)/takeoff procedures

Performance Standard: Demonstrate the ability to conduct CAL operations and considerations IAW the above listed items, CH-53 NATOPS, and NTTP 3-22.3-53.

Prerequisite: FAM-1104

External Syllabus Support: Aircrew Procedures Trainer

CAL-1601	1.5	*	B	D	A	2 CH-53
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Goal: Introduce Section Confined Area Landings (CALs)

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Introduce:

Crew Resource Management (CRM)
Operational Risk Management (ORM)
Formation landing
Loss of visual reference during landing
Confined Area Landings (CALs)/takeoff procedures

Performance Standard: Demonstrate the ability to conduct section CAL operations and considerations IAW the above listed items, CH-53 NATOPS, and NTTP 3-22.3-53.

Prerequisite: CAL-1600

CAL-1602 1.5 * B NS A 1 CH-53

Goal: Introduce Night Systems (NS) Confined Area Landings (CALs)

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Introduce:

Crew Resource Management (CRM)
Operational Risk Management (ORM)
Confined Area Landings (CALs)/takeoff procedures

Performance Standard: Demonstrate the ability to conduct aircrew duties during CAL operations and considerations while utilizing NS IAW the above listed items, CH-53 NATOPS, and NTTP 3-22.3-53.

Prerequisite: NFAM-1201 and CAL-1600

CAL-1603 1.5 * B NS A 2 CH-53

Goal. Practice Night Systems (NS) Section Confined Area Landings (CALs)

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Practice:

Crew Resource Management (CRM)
Operational Risk Management (ORM)
Confined Area Landings (CALs)/takeoff procedures
Formation landing

Performance Standard: Demonstrate the ability to conduct aircrew duties during section CAL operations and considerations while utilizing NS IAW the above listed items, CH-53 NATOPS, and NTTP 3-22.3-53.

Prerequisite: CAL-1602

3.7.7 External Loads

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 an NSI for 1705 and 1706.

Crew Requirement: CCI/CCUI

EXT-1700	1.5	*	B	D	S	WST/APT
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Goal: Introduce Single-Point External Operations Part 1

Requirement:

Instructor: FRSI

Discuss:

- Standard Terminology
- External cargo transport single-point suspension pre-flight
- Preflight procedures for each type of external
- Cargo equipment safety
- Operation of external cargo equipment safety
- Single-point suspension external transport of cargo procedure
- Single-point suspension attach cargo procedure
- Single-point suspension external cargo load release procedures
- External operation safety

Introduce:

- Cabin compartment organization
- External cargo transport
- Single-point suspension pre-flight procedures
- External cargo equipment
- Attach cargo (single-point suspension) procedures
- Single-point suspension external transport of cargo procedures

Performance Standard: Demonstrate the ability to conduct simulated single point external operations utilizing standard terminology IAW the above listed items, CH-53 NATOPS, and NTTP.

Prerequisite: FAM-1100

External Syllabus Support: Aircrew External Procedures Trainer

EXT-1701	1.5	*	B	D	S	WST/APT
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Goal: Introduce Dual-Point External Operations

Requirement:

Instructor: FRSI

Discuss:

- Preflight procedures for each type of external
- Cargo equipment safety
- Operation of external cargo equipment safety
- External cargo transport dual-point suspension pre-flight
- Dual-point suspension pre-takeoff
- External operation safety
- Standard Terminology

Introduce:

- External cargo transport dual-point suspension pre-flight procedures
- Pre-takeoff (dual-point suspension) procedures
- Dual-point suspension pre-takeoff monitoring procedures
- Dual-point suspension external transport of cargo procedures
- External cargo load release (dual-point suspension) procedures
- External cargo equipment

Performance Standard: Demonstrate the ability to conduct simulated dual point external operations utilizing standard terminology IAW the above listed items, CH-53 NATOPS, and NTTP.

EXT-1704 1.5 * B NS A 1 CH-53

Goal: Introduce Night Systems Single-Point External Operations

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Introduce:

Crew Resource Management (CRM)

Operational Risk Management (ORM)

Single-point suspension external transport of cargo procedures

External cargo load release (single-point) procedures

Performance Standard: Demonstrate the ability to conduct HLL single point external operations utilizing standard terminology IAW the above listed items, CH-53 NATOPS, and NTTP.

Prerequisite: CAL-1602 and EXT-1703

EXT-1705	1.5	*	B	NS	A	1 CH-53
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Goal: Introduce Night Systems (NS) Dual-Point External Operations

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM)

Introduce:

Crew Resource Management (CRM)

Operational Risk Management (ORM) process

External cargo load release (dual-point suspension) procedures

Performance Standard: Demonstrate the ability to conduct HLL dual point external operations utilizing standard terminology IAW the above listed items, CH-53 NATOPS, and NTPP.

Prerequisite: EXT-1704

3.7.8 Terrain Flight

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

TERF-1801	1.5	*	B	D	A	1 CH-53
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Goal: Practice Terrain Flight (TERF)

Requirement:

Instructor: FRSI

Discuss:

Crew Resource Management (CRM) principles

Emergency considerations during Terrain Flight (TERF)

Practice:

Crew Resource Management (CRM)
Operational Risk Management (ORM)
Terrain Flight (TERF) procedures

Performance Standard: Demonstrate the ability to conduct aircrew duties and responsibilities during TERF maneuvers and maintain aircraft clearances IAW the CH-53 NATOPS and NTP.

Prerequisite: CAL-1600

3.7.9 Review and Core Skill Introduction Evaluation

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 NATOPS Instructor (CCNI) or Fleet Replacement Squadron Instructor (FRSI) shall evaluate this stage of flight.

Crew Requirement: FRSI/CCUI

REV-1900 2.0 * B (NS) A 1 CH-53

Goal: Review emergency procedures while incorporating Crew Resource Management (CRM).

Requirement:

Instructor: FRSI OR NI

Discuss:

Performing emergency procedures
Emergency procedure safety

Review:

Engine emergency procedures
Bearing Monitor System emergency procedures
Tail rotor drive system emergency procedures
Hydraulic system emergency procedures
Electrical system emergency procedures
Transmission emergency procedures
Flight control emergency procedures
Fuel system emergency procedures
Landing gear emergency procedures
Fire emergency procedures
Emergency landing
Autorotative landing
Emergency descent

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.

Prerequisite: Completion of all applicable 1000 level flight events (TERF-1801 and below).

CSIX-1901 1.5 * B (NS) A 1 CH-53

Goal: Review Aircrew duties while incorporating Crew Resource Management (CRM).

Requirement:

Instructor: FRSI OR NI

Discuss:

- Aircrew duties
- Performing emergency procedures
- Emergency procedure safety

Review:

- Aircrew duties
- Engine emergency procedures
- Bearing Monitor System emergency procedures
- Tail rotor drive system emergency procedures
- Hydraulic system emergency procedures
- Electrical system emergency procedures
- Transmission emergency procedures
- Flight control emergency procedures
- Fuel system emergency procedures
- Landing gear emergency procedures
- Fire emergency procedures
- Emergency landing
- Auterotative landing
- Emergency descent

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.

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 from 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.

CORE PHASE (2000) OVERVIEW

CORE PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
INTERNALS (INT)	3.8.1	3-50
FORMATION (FORM)	3.8.2	3-52
CONFINED AREA LANDINGS (CAL)	3.8.3	3-53
TERRAIN FLIGHT (TERF)	3.8.4	3-55
EXTERNALS (EXT)	3.8.5	3-56
GROUND THREAT REACTION (GTR)	3.8.6	3-61
AERIAL GUNNERY (AG)	3.8.7	3-62
TACTICS (TAC)	3.8.8	3-68
HIGH LIGHT LEVEL (HLL)	3.8.9	3-71
LOW LIGHT LEVEL (LLL)	3.8.10	3-76

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-53E T&R:

<https://mceits.usmc.mil/sites/mawts1/Courseware/Forms/AllItems.aspx>

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

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

CORE PHASE (2000) ACADEMICS OVERVIEW

ACADEMICS STAGE						
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM
CORE SKILL (2000) CH-53E Academic						
ACAD-2004	1.0	*	B		G	(U) CH-53 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

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

3.8.1 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.

INTERNAL STAGE OVERVIEW

INTERNAL LOADS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2003	1.0	*	B		G		CH-53 CARGO OPERATIONS
INT-2100	1.5	*	B	(N)	A/S	1	CARGO LOADING SIM
INT-2101	1.5	*	B	(N)	A	1	PAX LOADING SIM
INT-2105	1.5	365	B,R,M	(NS)	A	1	CARGO LOADING
INT-2106	1.5	365	B,R,M	(NS)	A	1	PAX LOADING

INT-2100 1.5 * B (N) A/S 1-STATIC CH-53

Goal: Introduce and practice aircrew duties when loading, unloading and securing internal cargo and/or vehicle.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

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

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.

Prerequisite: ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night)

INT-2101 1.5 * B (N) A 1 STATIC CH-53

Goal: Introduce and practice passenger briefing, embark, securing, and debark procedures.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

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 stick 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

Prerequisite: ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night)

INT-2105 1.5 365 B,R,M (NS) A 1 CH-53

Goal: Introduce and practice aircrew duties when loading, unloading and securing internal cargo and/or vehicles.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

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

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.

Prerequisite: ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night), INT-2100

Crew Requirements: P/P/CC

External Syllabus Support: Applicable cargo and/or vehicles

INT-2106 1.5 365 B,R,M (NS) A 1 CH-53

Goal: Introduce and practice passenger briefing, embark, securing, and debark procedures.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

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.

Prerequisite: ACAD-2003, ACAD-2050, (ACAD-2052 if conducted at night), INT-2101

Crew Requirements: P/P/CC

3.8.2 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.

FORMATION STAGE OVERVIEW

FORMATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
FORM-2110	1.5	365	B.R.M	D	A	2	FORMATION FLIGHT

FORM-2110 1.5 365 B,R,M D A 2 CH-53

Goal: Introduce and practice aircrew duties during basic formation flight and introduce tactical formation flight.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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 NTPP 3-22.3-CH53.

Prerequisite: ACAD-2050

3.8.3 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.

CONFINED AREA LANDING STAGE OVERVIEW

CONFINED AREA LANDINGS/ MOUNTAIN AREA LANDINGS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CAL-2210	1.5	*	B	D	A/S	1	CALS
CAL-2211	1.5	365	B.R.M	D	A	2	SECTION CALS

CAL-2210	1.5	*	B	D	A/S	1 CH-53/MCAT
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Goal: Introduce and practice CALs/MALs using tactical approaches.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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
- 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.

Prerequisite: ACAD-2050

Range Requirements: See training resource requirements in Chapter 1 of this document.

External Syllabus Support: MCAT as required.

CAL-2211	1.5	365	B,R,M	D	A	2 CH-53
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Goal: Introduce and practice CALs/MALs using tactical approaches within a section.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: FORM-2110, CAL-2210

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

3.8.4 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.

TERRAIN FLIGHT STAGE OVERVIEW

TERRAIN FLIGHT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2051	1.0	*	B		G		EA TERRAIN FLIGHT
TERF-2310	1.5	*	B	D	A/S	1	TERF
TERF-2311	1.5	365	B,R,M	D	A	2	SECTION TERF

TERF-2310 1.5 * B D A/S 1 CH-53/MCAT

Goal: Introduce and practice maneuvers, clearance, standard terminology, and aircrew responsibilities while flying in the TERF environment.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: ACAD-2050, ACAD-2051

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support: MCAT as required.

TERF-2311 1.5 365 B,R,M D A 2 CH-53

Goal: Introduce and practice maneuvers, clearance, and aircrew responsibilities for a section of aircraft in the TERF environment.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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 NTTP 3-22.3-CH53.

Prerequisite: FORM-2110 and TERF-2310

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

3.8.5 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

EXTERNAL STAGE OVERVIEW

EXTERNAL LOADS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
EXT-2410	1.5	*	B	D	A	1	SINGLE POINT EXT
EXT-2411	1.5	365	B,R,M	D	A	1	DUAL POINT EXT
EXT-2420	1.5	*	B	HLL	A	1	HLL SINGLE POINT EXT
EXT-2421	1.5	180	B,R,M	HLL	A	1	HLL DUAL POINT EXT
EXT-2430	1.5	180	B,R,M	LLL	A	1	LLL EXT

EXT-2410 1.5 * B D A 1 CH-53

Goal: Introduce and practice single point external operations.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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 1st 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.

Prerequisite: CAL-2210

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External syllabus support: HST, single point loads.

EXT-2411 1.5 365 B,R,M D A 1 CH-53

Goal: Introduce and practice dual point external operations.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

Introduce/Discuss:

- Dual point external operations
- Preflight of hooks/pendants
- Hook checks
- Cargo hook control panel/switches
- Cargo hooks caution/advisory lights
- Aircrew portable pendant control
- Dual point release methods
- Cabin configuration/security for dual points prior to 1st external lift
- Gunners belt locations
- Brown out/white out procedures
- Movement in cabin with external hatch open
- MSSLM: Dual point load rigging procedures
- Weight limitations for dual point externals
- Proper inspection/rigging of the load
- HST brief
- Hand/Arm signals
- Scan pattern/sight fixation
- Aircrew portable pendant control
- Gunner's belt attachment location
- 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

Practice:

- 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.

Prerequisite: CAL-2210

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External syllabus support: HST, dual point load.

EXT-2420	1.5	*	B	HLL	A	1 CH-53
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Goal: Introduce and practice single point external operations utilizing Night Systems in HLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Introduce:

- HLL NS considerations as applicable to Single Point external operations
- Aircraft lighting considerations
- Crows foot/NATO Y setup/usage
- Use of chemical lights
- Field of View (FOV) vs. Field of Regard (FOR)

Discuss/Practice:

- Single point cargo hook system
- Pre-flight/hook checks
- Aircrew portable pendant control
- Cabin configuration/inspection prior to 1st 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.

Prerequisite: CAL-2220 and EXT-2410

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support: HST, single point load.

EXT-2421 1.5 180 B,R,M HLL A 1 CH-53

Goal: Introduce and practice dual point external operations using NS in HLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. FRS Instructors conducting Core Skill Introduction training must be FRS NS Qualified.

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 1st 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 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.

Prerequisite: CAL-2220 and EXT-2411

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support: HST, dual point load

EXT-2430 1.5 180 B,R,M LLL A 1 CH-53

Goal: Introduce and practice external operations in LLL conditions, dual point preferred.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POL.

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 1st 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

Performance Standards: Conduct external operations while utilizing Night Systems during LLL 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.

Prerequisite: CAL-2230, EXT-2420, EXT-2421, NSQ-HLL

Range Requirement: IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support: HST, approved external load.

3.8.6 Ground Threat Reaction (GTR)

Purpose: To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics, and onboard weapon systems to evade non-radar ground-to-air threats.

General: Aircrew shall conduct this stage against non-radar ground-based threats. Utilizing a range of threat simulation systems (e.g., Smokey SAMs, target lights, handheld pyrotechnics and AAR-47 stimulator) 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.

GTR STAGE OVERVIEW

GROUND THREAT REACTION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2004	1.0	*	B		G		AAR/ALE-47
ACAD-2019	1.0	*	B		G		AAQ-24
ACAD-4051	1.0	*	B		G		CH-53 DM/GTR I
GTR-2540	1.5	365	B,R,M	(NS)	A/S	2	NON RADAR GTR

GTR-2540 1.5 365 B,R,M (NS) A/S 2 CH-53/MCAT

Goal: Introduce and practice non-radar ground based threat reactions and ASE familiarization.

Requirement:

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 if conducted at night for all personnel in the Basic (B) and Refresher (R) POI.

Introduce/Discuss:

- Types of Non-Radar ground threat (Small arms, HMG, RPG, 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.

Prerequisite: ACAD-2004, ACAD-2019, ACAD-4051, ACAD-4052 TERFQ. HLL-2321~NS, LLL-2331~LLL.

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.

3.8.7 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 in flight 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.

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.

AG STAGE OVERVIEW

AERIAL GUNNERY STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2053	1.0	*	B		G		FUNDAG
ACAD-2055	1.0	*	B		G		EA GAU-21
ACAD-2056	1.0	*	B		G		LASER AIMING DEVICES
AG-2800	3.0	*	B	D	G		GAU-21 LAB
AG-2801	2.0	*	B	D	A	1	GAU-21 MWPC LAB
AG-2802	2.0	*	B	D	S/A	1	WEAPONS PROCEDURE LAB
AG-2812	1.5	*	B	D	A	1	DAY SINGLE AG
AG-2813	1.5	180	B,R,M	D	A	2	DAY SECTION AG
AG-2842	1.5	*	B	NS	A	1	NS SINGLE AG
AG-2843	1.5	180	B,R,M	NS	A	2	NS SECTION AG

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:

Instructor: AGI on the GAU-21 MWPC required for all personnel in the Basic (B) and Refresher (R) POI.

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 striping, cleaning, inspection, lubrication, and re-assembly of the weapon ensuring correct feed orientation IAW all applicable manuals.

Prerequisites: ACAD-2055

Ordinance Requirements: 1 GAU-21 .50 caliber machine gun per student.

AG-2801 2.0 * B D A 1 STATIC CH-53

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:

Instructor: AGI on the GAU-21 required for all personnel in the Basic (B) and Refresher(R) POI.

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.

Prerequisites: ACAD-2056, ACAD-2057, AG-2800

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

AG-2802 2.0 * B D S/A 1 STATIC CH-53/MCAT

Goal: Introduce and practice normal firing operations, voice commands, weapons emergencies, troubleshooting techniques, egress considerations IAW A1-H53BE-NFM-900. All procedures shall be performed with dummy rounds and no batteries installed in the LASER aiming device.

Requirements:

Instructor: AGI on the GAU-21 required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisites: AG-2801

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.

AG-2812 1.5 * B D A 1 CH-53

Goal: Introduce and practice day aerial gunnery training with the GAU-21 MWPC during single ship operations.

Requirement:

Instructor: AGI on the GAU-21 required for all personnel in the Basic (B) and Refresher(R) POI.

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.

Prerequisites: ACAD-2053, TERF-2310, AG-2802

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.

AG-2813 1.5 180 B,R,M D A 2+ CH-53

Goal: Introduce and practice day aerial gunnery with the GAU-21 MWPC during multi-ship operations.

Requirement:

Instructor: AGI on the GAU-21 required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisites: TERF-2311, AG-2812

Ordnance: 600 rounds per 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.

AG-2842 1.5 * B NS A 1 CH-53

Goal: Introduce and practice aerial gunnery with the GAU-21 MWPC while utilizing Night Systems during single ship operations.

Requirement

Instructor: AGI on the GAU-21 who is also a NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: TERF-2320 if HLL, TERF-2330 if LLL, AG-2812

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.

AG-2843 1.5 180 B,R,M NS A 2+ CH-53

Goal: Introduce and practice aerial gunnery with the GAU-21 MWPC while utilizing Night Systems during multi-ship operations.

Requirement:

Instructor: AGI on the GAU-21 who is also a NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: TERF-2321~HLL, TERF-2331~LLL, AG-2813, AG-2842

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.

3.8.8 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.

TAC STAGE OVERVIEW

TACTICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
TAC-2910	2.0	*	B	D	A	2	LOW THREAT LEVEL TACTICS
TAC-2911	2.0	365	B,R,M	D	A	2	MEDIUM THREAT LEVEL TACTICS

TAC-2910 2.0 * B D A 2 CH-53

Goal: Introduce and practice aircrew responsibilities during a low threat section tactical operation.

Requirement:

Instructor: TERFI that is GAU-21 AGQ is required for all personnel in the Basic (B) and Refresher (R) POI. WTI's should be utilized to the max extent possible.

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
- Winter vs. Devil 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 NTTP 3-22.3-53. Demonstrate knowledge/usage of mission planning products. If rounds are utilized refer to AG-codes for weapons performance standards.

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 “**SHALL**” be 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

TAC-2911 2.0 365 B,R,M D A 2 CH-53

Goal: Introduce and practice aircrew responsibilities during day medium threat tactical operations with multiple aircraft.

Requirement:

Instructor: TERFI that is GAU-21 AGQ is required for all personnel in the Basic (B) and Refresher (R) POI. WTI's should be utilized to the max extent possible.

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
- "Winter/Devil" 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.

Prerequisites: TAC-2910

Ordnance: 2 GAU-21 MWPC .50 caliber machine guns, 1 left hand GAU-21 MWPC, 1 right hand GAU-21 MWPC are required to be 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/Ordnance/Escort request if utilized.

3.8.9 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. FRS Instructors are required to maintain Fleet Replacement Squadron Night Systems Qualified (FRS NSQ) in order to conduct Core Introduction Phase training under HLL conditions.

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 completion of 2120, 2220, and 2221 constitutes FRS NSQ. 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

HLL STAGE OVERVIEW

HIGHLIGHT LEVEL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2052	1.0	*	B		G		EA NIGHT VISION TRAINING
HLL-2120	1.5	365	B,R,M	HLL	A	2	HLL FORM
HLL-2220	1.5	*	B	HLL	A	1	HLL CALS
HLL-2221	1.5	180	B,R,M	HLL	A	2	HLL SECTION CALS
HLL-2320	1.5	*	B	HLL	A	1	HLL TERF
HLL-2321	1.5	180	B,R,M	HLL	A	2	HLL SECTION TERF
HLL-2920	2.0	365	B,R,M	HLL	A	2+	HLL LOW THREAT TACTICS

HLL-2120 1.5 365 B,R,M HLL A 2 CH-53

Goal: Introduce and practice aircrew duties during basic NS formation flight and introduce NS tactical formation flight.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. FRS Instructors conducting Core Skill Introduction training must be FRS NS Qualified.

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.

Prerequisite: ACAD-2052, FORM-2110

HLL-2220	1.5	*	B	HLL	A	1 CH-53
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Goal: Introduce and practice single ship CALs/MALs operations using NS under HLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. FRS Instructors conducting Core Skill Introduction training must be FRS NS Qualified.

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.

Prerequisite: ACAD-2052, CAL-2210

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

HLL-2221	1.5	180	B,R,M	HLL	A	2 CH-53
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Goal: Introduce and practice CALs/MALs operations within a section while utilizing NS under HLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. FRS Instructors conducting Core Skill Introduction training must be FRS NS Qualified.

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.

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-53

Goal: Introduce and practice maneuvers and clearance while flying in a TERF regime using NS in HLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

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	HLL	A	2 CH-53
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Goal: Introduce and practice maneuvers and clearance while flying within a section in the TERF regime using NS in HLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: HLL-2120, TERF-2311, HLL-2320

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

HLL-2920 2.0 365 B,R,M HLL A 2+ CH-53

Goal: Introduce and practice aircrew responsibilities during tactical operations with multiple aircraft during HLL using NS.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. WTI's should be utilized to the max extent possible.

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)
- "Winter vs. Devil" 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.

Prerequisite: HLL 2221, HLL 2321, TAC 2910

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

3.8.10 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

LLL STAGE OVERVIEW

LOW LIGHT LEVEL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
LLL-2230	1.5	*	B	LLL	A	1	LLL CALS
LLL-2231	1.5	180	B,R,M	LLL	A	2	LLL SECTION CALS
LLL-2330	1.5	*	B	LLL	A	1	LLL TERF
LLL-2331	1.5	180	B,R,M	LLL	A	2	LLL SECTION TERF
LLL-2930	2.0	365	B,R,M	NS	A	2+	LLL/ MED THREAT TACTICS

LLL-2230 1.5 * B LLL A 1 CH-53

Goal: Introduce and practice single ship CALs/MALs operations using NS under LLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: NSQ HLL

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

LLL-2231 1.5 180 B,R,M LLL A 2 CH-53

Goal: Introduce and practice CALs/MALs operations within a section while utilizing NS under LLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: LLL-2230

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

LLL-2330	1.5	*	B	LLL	A	1 CH-53
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Goal: Introduce and practice maneuvers and clearance while flying in a TERF regime using NS in LLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Introduce/ Discuss:

TERF while utilizing NS in LLL

Practice:

- CC vs. AG/O responsibilities during LLL TERF
- CRM and crew coordination during LLL TERF
- LLL NS considerations
- 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 NTP 3-22.3-CH53.

Prerequisite: NSQ HLL

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

LLL-2331 1.5 180 B,R,M LLL A 2 CH-53

Goal: Introduce and practice maneuvers and clearance while flying in a TERF regime using NS in LLL conditions.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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 NTP 3-22.3-CH53.

Prerequisite: LLL-2330

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

LLL-2930 2.0 365 B,R,M LLL A 2+ CH-53

Goal: Introduce and practice aircrew responsibilities during medium threat tactical operations with multiple aircraft utilizing NS in the LLL environment.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI. WTIs should be utilized to the max extent possible.

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)
- "Winter vs. Devil" 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.

Prerequisite: LLL-2231, LLL-2331

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

3.9 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).

Initial attempts to complete Mission Skills should be made in the aircraft; subsequent attempts may be accomplished in the simulator.

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)

Crew Requirements: P/P/CC/AG/O

MISSION PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	3.9.1	3-82
COMBAT ASSAULT TRANSPORT (CAT)	3.9.2	3-83
AERIAL DELIVERY (AD)	3.9.2	3-83
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)	3.9.2	3-84
AIR EVACUATION (AE)	3.9.2	3-85

3.9.1 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/Courseware/Forms/AllItems.aspx>

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53:

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

Mission Phase Academic Overview

MISSION PHASE ACADEMICS							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-3002	0.8	*	B		G		NEO EXECUTION
ACAD-3004	1.0	*	B		G		PERSONNEL RECOVERY
ACAD-3005	0.8	*	B		G		CH-53 TRAP TTIPS
ACAD-3006	0.5	*	B		G		CASEVAC

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

Academic: See event

Flight: LLL-2930, AG-2843, GTR-2540

Designation: NSQ-LLL, AGQ

3.9.2 Mission Phase (3000) Flight Events

MISSION PHASE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CAT-3240	2.0	365	B,R,M	(NS)	A	2+	COMBAT ASSAULT TRANS
AD-3340	2.0	365	B,R,M	(NS)	A	2+	AERIAL DELIVERY
TRAP-3440	2.0	365	B,R,M	(NS)	A	2+	TRAP
AE-3540	2.0	365	B,R,M	(NS)	A	2+	AIR EVACUATION

CAT-3240 2.0 365 B,R,M (NS) A 1+ CH-53

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:

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.

Review:

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.

Prerequisite: NSQ LLL, AGQ, ACAD-3002, GTR-2540

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.

AD-3340 2.0 365 B,R,M (NS) A 1+ CH-53

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, NAVSUP PUB Series)

Requirement:

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.

Review:

EXT-2410, EXT-2411, TEXT-4412 (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.

Prerequisite: Aircrew must be proficient in the appropriate aerial delivery method being executed, EXT-2430, NSQ LLL, AGQ, GTR-2540.

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.

TRAP-3440 2.0 365 B,R,M (NS) A 1+ CH-53

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, MCRP 2-10A.2, MCWP 3-20, MCTP 3-01B, MCTP 3-20E, MCRP 3-20F.2, NDP 1, NWP 3-05)

Requirement:

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.

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.

Prerequisite: NSQ LLL, AGQ, ACAD-3004, ACAD-3005, GTR-2540

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.

AE-3540 2.0 365 B,R,M (NS) A 1+ CH-53

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:

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.

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.

Prerequisite: NSQ LLL, AGQ, ACAD-3006, GTR-2540

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.

3.10 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: All Core Plus Mission events shall follow the guideline of the Mission Skill section.

Stages: The following stages are included in the Core Plus Phase of training:

CORE PLUS PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	3.10.1	3-86
HELICOPTER INSERTION AND EXTRACTION TECHNIQUES (HIE)	3.10.2	3-86
AVIATION DELIVERED GROUND REFUELING (ADGR)	3.10.3	3-89
BATTLEFIELD ILLUMINATION (BI)	3.10.4	3-90
TERRAIN FLIGHT EXTERNALS (TERF EXT)	3.10.5	3-91
DEFENSIVE MEASURES (DM)	3.10.6	3-93
GROUND THREAT REACTION (GTR)	3.10.7	3-95
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR (CBRN)	3.10.8	3-96
FIELD CARRIER LANDING PRACTICE (FCLP)	3.10.9	3-97
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3.10.1 Ground/Academic Training

Purpose: Within the Core Plus 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.

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

<https://mceits.usmc.mil/sites/mawts1/Courseware/Forms/AllItems.aspx>

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

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

Core Plus Academic Phase Academic Overview

ACADEMICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	T&R DESCRIPTION
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

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

Academic: See event

Flight: see event

Designation: CC/AG/O

3.10.2 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 STAGE OVERVIEW

HELICOPTER INSERTION/EXTRACTION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
HIE-4110	1.5	485	B,R,M	D	A	1	HELOCAST
HIE-4140	1.5	*	B	(NS)	A	1	FASTROPE/RAPPEL
HIE-4141	1.5	*	B	(NS)	A	1	PARAOPS

HIE-4110 1.5 485 B,R,M D A 1 CH-53

Goal: Introduce and practice procedures for tactical insertion Helo-cast.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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 stick leader/ Helo-cast Master
- Intraplane communication

Performance Standards: Conduct procedures for a tactical insertion via Helocast IAW applicable NTTP 3-22.3-53.

Prerequisite: TERFQ, INT-2106

External Syllabus Support: Helocast Master, safety boat, and safety personnel.

HIE-4140 1.5 * B (NS) A 1 CH-53

Goal: Introduce and practice tactical insertion and/or extraction of a ground force via fast rope, rappelling, or SPIE.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

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.

Prerequisite: CAL-2210, (HLL-2920~NS or LLL-2930~LLL)

External Syllabus Support: HRST Master and ground safety personnel

HIE-4141 1.5 * B (NS) A 1 CH-53

Goal: Introduce and practice procedures for tactical insertion via para/Ops.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

Introduce /Discuss:

- CC vs. AG/O responsibilities during Para-Ops
- CRM and crew coordination during Para-Ops
- Safety considerations with door/ramp open and passengers onboard
- Sequence of events
- Para/Ops Terminology
- Container delivery system
- Fouled/hung jumper/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
- 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 NTTP 3-22.3-53.

Prerequisite: HLL-2920~NS or LLL-2930~LLL

External Syllabus Support: Jump master and ground safety personnel

3.10.3 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-53E.

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

ADGR STAGE OVERVIEW

ADGR STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4011	1.0	*	B		G		EA ADGR TBFDS
ADGR-4240	1.5	365	B,R,M	(NS)	A	1	FARPOPS

ADGR-4240 1.5 365 B,R,M (NS) A 1 STATIC CH-53/1 CH-53

Goal: Introduce and practice installation and setup of TBFDS system and become familiar with FARP operations.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI. NSI required if conducted at night.

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/aerial)
- TBFDS offload methods
- Types of FARPs
- Crew member/MMT responsibilities
- FARP setup/pre-flight
- 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 type 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
Cabin configuration of ADGR equipment
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

Prerequisite: INT-2105, 2210, HLL-2920~HLL, LLL-2930~LLL, ACAD-4011

External Syllabus Support: TBFDS, ground assets to refuel, aviation assets to refuel

3.10.4 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.

BI STAGE OVERVIEW

BATTLEFIELD ILLUMINATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4300	1.0	*	B		G		EA BATTLEFIELD ILLUMINATION
BI-4340	1.0	1095	B,R,M	NS	A	1	BATTLEFIELD ILLUMINATION

BI-4340 1.5 1095 B,R,M NS A 1 CH-53

Goal: Conduct Aviation-Delivered Battlefield Illumination in support of night tactical operations.

Requirement:

Instructor: APFI required for all personnel in the Basic (B) POI.

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 & Primary Aircrewman 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

Performance Standards: Plan, conduct, and execute a BI mission, IAW NTTP series publications.

Prerequisite: NSQ-LLL, AGQ, ACAD-4300

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

Ordinance Requirements: 6x LUU-2 or 6x LUU-19

3.10.5 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

TERF EXTERNAL STAGE OVERVIEW

TERRAIN FLIGHT EXTERNAL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
EXT-4412	1.5	*	B	D	A/S	1+	DAY TERF EXTERNALS
EXT-4440	1.5	365	B,R,M	NS	A	1+	NS TERF EXTERNALS

EXT-4412 1.5 * B D A/S 1+ CH-53/MCAT

Goal: Introduce and practice external operations while in the TERF environment.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

Review:

TERF-2310
EXT-2410 or EXT-2411 as applicable

Introduce/Discuss:

Single/dual point 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 (DP/ SP)

Performance Standards: Conduct single or dual point external operations while in the TERF regime IAW above listed items, NATOPS and NTTP 3-22.3-CH53. Execute a minimum of 1 pickup and 1 drop off within 5 meters of intended point of delivery.

Prerequisite: TERF-2310, EXT-2410~single point or EXT-2411~dual points.*

* Single Point 2410 and Dual Point 2411 cannot be automated in M-SHARP for chaining or prerequisites. Manual tracking must be maintained.

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support: HST, certified external load, or MCAT as required.

EXT-4440	1.5	365	B,R,M	NS	A	1+ CH-53
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Goal: Introduce and practice external operations while in the TERF regime while utilizing Night Systems in any ambient light condition.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

Review:

- TERF-2320 or 2330 as applicable
- EXT-2420 thru EXT-2430 as applicable
- TERF EXT-4412

Introduce/Discuss:

Single/dual point external operations while in the TERF environment utilizing Night Systems

Practice:

- CC vs. AG/O responsibilities during NS TERF EXT operations
- CRM and crew coordination during NS 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.

Prerequisite: TERF-2320~NS, EXT-2420~NS, TERF-2330~LLL and EXT-2430~LLL. EXT-2421 if dual points are utilized. *

* Dual Point 2421 cannot be automated in M-SHARP for chaining or prerequisites. Manual tracking must be maintained.

Range Requirements: IAW Training Resource Requirements in Chapter 1 of this document.

External Syllabus Support: HST, certified external load

3.10.6 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

DM Overview

DEFENSIVE MEASURES STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4051	1.5	*	B		G		CH-53 DM/GTR I
ACAD-4052	1.5	*	B		G		CH-53 DM/GTR II
DM-4510	1.5	365	B,R,M	D	A	2	RW DM
DM-4511	1.5	365	B,R,M	D	A	2	FW DM

DM-4510 1.5 365 B,R,M D A 2 CH-53

Goal: Introduce and practice aircrew responsibilities as a section against a rotary wing adversary.

Requirement:

Instructor: DMI required for all personnel in the Basic (B) and Refresher (R) POI.

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
ICS procedures/failure
Adversary weapons envelope
ACM in comparison to DM training
Aircraft emergency procedures

Performance Standards: Conduct helicopter Defensive Measures against a rotary wing adversary 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.

Prerequisite: TERFQ, AGQ, ACAD-2004, ACAD-2012, ACAD-2019, ACAD-4051, ACAD-4052 Review ACAD-2050.

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

DM-4511	1.5	365	B,R,M	D	A	2 CH-53
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Goal: Introduce and practice aircrew responsibilities as a section against a fixed wing adversary.

Requirement:

Instructor: DMI required for all personnel in the Basic (B) and Refresher (R) POI.

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 section Defensive Measures against a fixed wing adversary 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.

Prerequisite: TERFQ, AGQ, ACAD-2004, ACAD-2012, ACAD-2019, ACAD-4051, ACAD-4052 Review ACAD-2050, ACAD-2012.

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

3.10.7 Radar Ground Threat Reaction (GTR)

Purpose: To introduce and develop proficiency in utilizing ASE and tactics to defeat ground-based radar threats.

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

RGTR Overview

RADAR GROUND THREAT REACTION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4050	1.0	*	B		G		BASIC PRICIPLES OF EW
ACAD-4051	1.0	*	B		G		DM/GTR 1
GTR-4540	1.5	365	B,R,M	(NS)	A	2	RADAR GTR

GTR-4540 1.5 365 B,R,M (NS) A 2 CH-53

Goal: Conduct ground based RADAR threat reactions, TTP validation, and ASE familiarization.

Requirement:

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 if conducted at night.

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.

Prerequisite: ACAD-2004, ACAD-2012, ACAD-2019, ACAD-4051, ACAD-4052 TERFQ. TERF-2321~HLL, TERF-2331~LLL, TERF-2311

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

3.10.8 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 Overview.

CHEMICAL/BIOLOGICAL/RADIOLOGICAL/NUCLEAR STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CBRN-4600	1.5	1095	B,R,M	(NS)	S/A	1	CBRN FAM

CBRN-4600 1.5 1095 B,R,M (NS) S/A 1 CH-53

Goal: Conduct flight in a simulated CBRN environment

Requirement

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.

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.

3.10.9 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-4740: 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.

FCLP STAGE OVERVIEW

FIELD CARRIER LANDING PRACTICE STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
FCLP-4710	1.5	365	B,R,M	D	A	1	DAY FCLP
FCLP-4740	1.5	365	B,R,M	NS	A	1	NS FCLP

FCLP-4710 1.5 365 B,R,M D A 1 CH-53

Goal: Introduce and practice day FCLPs.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: CAL-2210

External Syllabus Support: FCLP pad

FCLP-4740 1.5 365 B,R,M NS A 1 CH-53

Goal: Introduce and practice NS FCLPs.

Requirement:

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: HLL-2220~NS, LLL-2230~LLL, and FCLP-4710

External Syllabus Support: FCLP pad

3.10.10 Day Carrier Qualification (DCQ)

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-53E 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 and cargo 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

CARRIER QUALIFICATION STAGE OVERVIEW

CARRIER QUALIFICATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
DCQ-4711	1.5	365	B,R,M	D	A	1	DAY CQ
UACQ-4741	1.5	365	B,R,M	N*	A	1	UNAIDED CQ
NSCQ-4742	1.5	365	B,R,M	NS	A	1	NIGHT CQ

DCQ-4711 1.5 365 B,R,M D A 1 CH-53

Goal: Introduce and practice day CQs.

Requirement:

Instructor: TERFI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: FCLP-4710

External Syllabus Support: Helicopter capable ship

3.10.11 Night Unaided Carrier Qualification (UACQ)

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-53E 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. CQ-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/AG/O

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 1 CH-53

Goal. Conduct night unaided CQs.

Requirements. Initial UACQ-4741 shall be conducted under HLL conditions.

Instructor. NSI required for the Basic (B) and Refresher (R) POI.

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 Unaided CQs IAW above listed items, CH-53 NATOPS and appropriate shipboard NATOPS.

Prerequisites. NSQ HLL, NSQ LLL~LLL, FCLP-4740, and DCQ-4711

External Syllabus Support. NS compatible helicopter capable ship or WST/APT.

3.10.12 NS Carrier Qualification (NSCQ)

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-53E 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. CQ-4743 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, CNAF M-3710.7 regarding shipboard operations, and MAWTS-1 Course Catalog, ASP.

Prerequisites: NSQ HLL, NSQ LLL~LLL, FCLP-4740, and DCQ-4711

NSCQ-4742 1.5 365 B,R,M NS A 1 CH-53

Goal: Introduce and practice NS CQs.

Requirement

Instructor: NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisite: NSQ HLL, NSQ LLL~LLL, FCLP-4740, and DCQ-4711.

External Syllabus Support: NS compatible helicopter capable ship

3.10.13 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 the Commanding Officer after completing TG-4840. If the Commanding Officer chooses to qualify

the aircrew as a 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 do 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 and **SHALL** be utilized during all night systems (NS) tail gunnery flight events.

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.

TG STAGE OVERVIEW

TAIL GUNNERY STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4053	1.0	*	B		G		EA TRAINING TAIL GUNNER
ACAD-2055	1.0	*	B		G		EA GAU-21
ACAD-2056	1.0	*	B		G		LASER AIMING DEVICES
TG-4800	1.5	*	B	(N)	S/A	1	STATIC TAIL GUN TRAINING
TG-4810	1.5	*	B	D	A	1	DAY TG
TG-4811	1.5	180	B,R,M	D	A	2	DAY SECTION TG
TG-4840	1.5	180	B,R,M	NS	A	2	NS SECTION TG

TG-4800 1.5 * B (N) S/A 1 STATIC CH-53/MCAT

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:

Instructor: AGI able to conduct training on the GAU-21 RMWS required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisites: ACAD-4053, AGQ

Ordnance Requirements: 1 GAU-21 RMWS .50 caliber machine gun, approved LASER aiming device, 10 dummy rounds

External Syllabus Support: MCAT as required.

TG-4810	1.5	*	B	D	A	1 CH-53
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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:

Instructor: AGI able to conduct training on the GAU-21 RMWS required for all personnel in the Basic (B) and Refresher (R) POI.

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.

Prerequisites: AGQ, TG-4800

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.

TG-4811 1.5 180 B,R,M D A 2 CH-53

Goal: Introduce and practice day aerial gunnery with the GAU-21 RMWS during multi-ship operations.

Requirement:

Instructor: AGI able to conduct training on the GAU-21 RMWS required for all personnel in the Basic (B) and Refresher (R) POI.

Introduce/Discuss:

- Wingman NFAs
- Section responsibilities
- Sectors of fire
- Target handoff from MWPC to RMWS

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
- 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 the target area by second burst.

Prerequisites: TG-4810

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.

TG-4840 1.5 180 B,R,M NS A 2 CH-53

Goal: Introduce and practice aerial gunnery with the GAU-21 RMWS while utilizing Night Systems during multi-ship operations.

Requirement:

Instructor: AGI able to conduct training on the GAU-21 RMWS who is also a NSI required for all personnel in the Basic (B) and Refresher (R) POI.

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
- 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
- Target handoff from MWPC to RMWS
- Conventional Ordinance 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.

Prerequisites: TG-4811

Ordinance: 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.

3.10.14 Moving Target Gunnery (MTG)

Purpose: To introduce techniques and profiles in conducting MTG.

General

Aircrews shall fly this stage IAW NTTP 3-22.3-53.

Aircrew employing weapons shall have the current A1-H53BE-NFM-900 with all of the interim changes incorporated, on their person.

Aircrew may conduct night systems moving target gunnery events during either HLL or LLL conditions. If events are conducted during LLL conditions aircrew shall be NSQ HLL prior to conducting events.

Moving Target Gunnery may be conducted utilizing the GAU-21 MWPC or the GAU-21 RMWS. If the GAU-21 RMWS is utilized aircrew shall be at a minimum AGQ on the GAU-21 MWPC and in the TG syllabus.

An AGI on the GAU-21 MWPC is required for all day moving target gunnery flight events when utilizing the GAU-21 MWPC.

An AGI able to conduct training on both the GAU-21 MWPC and RMWS is required for all day moving target gunnery flight events if utilizing the GAU-21 RMWS.

An AGI on the GAU-21 MWPC who is also a NSI is required for all moving target gunnery flight events conducted utilizing the GAU-21 MWPC and Night Systems.

An AGI able to conduct training on both the GAU-21 MWPC and RMWS who is also a NSI is required for all moving target gunnery flight events conducted utilizing the GAU-21 RMWS and Night Systems.

Laser aiming devices are required if event is flown at night and **SHALL** be utilized.

Crew Requirements: 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.

MOVING TARGET GUNNERY STAGE

MOVING TARGET GUNNERY STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
MTG-4841	1.5	*	B	(NS)	A/S	1+	MOVING TARGET GUNNERY

MTG-4841 1.5 * B (NS) A/S 1+ CH-53/MCAT

Goal: Introduce and practice moving target gunnery.

Requirement:

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) and Refresher (R) POI. NSI who is also an AGI is required if conducted at night.

Review:

AG-2812-2843 as applicable
TG-4810-4840 as applicable

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 MWPC or 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. Aerial 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 target area by second burst.

Prerequisite: AG-2812~DAY, AG-2842~NS, TG-4810~DAY, TG-4840~NS.

Ordnance: 600 rds. of .50 caliber per crew member. 2 GAU-21 MWPC; 1 GAU-21 RMWS if applicable; 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.

3.10.15 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.

TAC STAGE OVERVIEW

CORE PLUS TACTICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
TAC-4940	2.0	365	B,R,M	(NS)	A	3+	DIV TACTICS
TAC-4941	2.0	365	B,R,M	(NS)	A	2+	URBAN TACTICS

TAC-4940 2.0 365 B,R,M (NS) A 3+ CH-53

Goal: Develop integrated tactical flight proficiency in a low to medium threat environment within a division.

Requirement:

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.

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.

Prerequisite: TAC-2911, HLL-2920~NS, LLL-2930~LLL.

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

TAC-4941 2.0 365 B,R,M (NS) A 2 CH-53

Goal: Develop tactical flight proficiency in urban terrain operations at night.

Requirement:

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.

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.

Prerequisite: HLL-2920~HLL or LLL-2930~LLL

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

3.11 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 HMM 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)

Stages. The following stages are included in the Mission Plus Phase.

MISSION PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
RAPID INSERTION/EXTRACTION (RIE)	3.11	3-111
AVIATION DELIVERED GROUND REFUELING (ADGR)	3.11	3-112
EXPEDITIONARY SEA-BASED OPERATIONS (SEA)	3.11	3-113

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

Designation: CC/AG/O

Qualification: NSQ LLL, AGQ

Flight Events:

MISSION PLUS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
RIE-4980	2.0	365	B,R,M	(NS)	A	1+	RAPID INSERTION/EXTRACTION
ADGR-4981	2.0	365	B,R,M	(NS)	A	1+	AVIATION DELIVERED GROUND REFUELING
SEA-4982	2.0	365	B,R,M	(NS)	A	1+	SEA BASED TACTICS

RIE-4980 2.0 365 B,R,M (NS) A 1+ CH-53

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.

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.

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.

Prerequisite: NSQ LLL, AGQ, GTR-2540; 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.

Ordnance: 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.

ADGR-4981 2.0 365 B,R,M (NS) A 1+ CH-53

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:

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.

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.

Prerequisite: NSQ LLL, AGQ, ADGR-4240

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

SEA-4982 2.0 365 B,R,M (NS) A 1+ CH-53

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:

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.

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.

Prerequisite: NSQ-LLL, AGQ, GTR-2540, and appropriate CQ/FCLP event.

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.

3.12 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-53E T&R:

<https://vcepub.tecom.usmc.mil/sites/msc/magtftc/mawts1/>

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

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

3.12.1 Fleet Replacement Squadron Instructor CH-53E

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.

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.

FRSI-5100 1.5 * B D A 2 CH-53

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.

FRSI-5101 1.5 * B NS A 2 CH-53

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 D A 1 CH-53

Goal: Demonstrate CC responsibilities and instructional techniques during CALs.

Requirement:

Discuss:

- CALs
- CRM
- Landing gear system failures
- Vibrations
- Engine failures in flight

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** **NS** **A** **1 CH-53E**

Goal: Demonstrate FRSI responsibilities and instructional techniques during HLL NS CALs.

Requirement:

Discuss:

- NS
- NS considerations
- Lighting
- CALs
- CRM
- Landing gear system failures
- Vibrations
- Engine failures in flight

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	D	A	1 CH-53
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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
- Landing gear system failures
- Vibrations
- Engine failures in flight

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

FRSI-5105 1.5 * B D A 1 CH-53

Goal: Demonstrate FRSI responsibilities and instructional techniques used during day single or dual point (53E) external operations.

Requirement:

Discuss:

- CC duties
- Standard terminology
- External operations
- CALs
- CRM
- Landing gear system failures
- Emergencies

Performance Standards: Demonstrate proper FRSI techniques and responsibilities used during external operations IAW requirements outlined in this Chapter.

Range Requirements: CAL/MAL site

External Syllabus Support: HST, certified load

FRSI-5106 **1.5** ***** **B** **NS** **A** **1 CH-53**

Goal: Demonstrate FRSI responsibilities and instructional techniques used during HLL NS external operations.

Requirement:

Discuss:

- NS considerations
- Lighting
- CC duties
- Standard terminology
- External operations
- CALs
- CRM
- Landing gear system failures
- Emergencies

Performance Standards: Demonstrate proper FRSI techniques and responsibilities used during HLL NS external operations IAW requirements outlined in this Chapter.

Range Requirements: Approved CAL/MAL site

External Syllabus Support: HST, certified load

FRSI-5107 1.5 * B (NS) A 1 CH-53

Goal: CC standardization check

Requirement:

Review:

- Applicable 1000 series codes

Discuss:

- CCUI duties/responsibilities
- Standard terminology
- External operations
- CALs
- CRM
- Emergency procedures
- Instructional techniques

Performance Standards: Demonstrate standard FRSI procedures, techniques and responsibilities IAW requirements outlined in this Chapter.

Prerequisite: FRSI-5100, FRSI-5101, FRSI-5102, FRSI-5103, FRSI-5104, FRSI-5105, FRSI-5106

External Syllabus Support: As required

3.12.2 Fleet Squadron Instructors: See Paragraph 3.14

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

3.13.1 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.

Crew Requirements: P/P/CC/AG/O (as required)

Ground Academic Training: Open, closed book and oral evaluation IAW CNAF M-3710.7 and the CH-53 NATOPS.

NTPS-6000 3.0 365 B,R,M G Open Book Examination

Goal: Open book written examination to evaluate the airman's NATOPS knowledge IAW CNAF M-3710.7.

Performance Standard: IAW CNAF M-3710.7

NTPS-6001 1.0 365 B,R,M 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.

Performance Standard: IAW CNAF M-3710.7 and CH-53 NATOPS

Prerequisites: NTPS-6000.

NTPS-6002 2.0 365 B,R,M G Oral Examination

Goal: Oral examination to evaluate the airman's NATOPS knowledge IAW CNAF M-3710.7 and CH-53 NATOPS.

Requirement:

Instructor: NATOPS Instructor or Assistant NATOPS Instructor required

Performance Standard: 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.

Performance Standard: CNAF M-3710.7 and CH-53 NATOPS

Prerequisites: Shall be completed after designation as CH-53 Crew Chief or Aerial Observer/Gunner.

NTPS-6005 1.0 90 B,R,M (NS) A/S 1 CH-53/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/Gunner.

NTPS-6100 1.5 365 B,R,M (NS) A/S 1 CH-53/MCAT

Goal: Completion of the annual NATOPS evaluation

Requirement:

Instructor: NATOPS Instructor or Assistant NATOPS Instructor required. NSI is required if not NS qualified in the light level event is conducted.

Discuss:

- Crew Brief
- Aerial Gunner Observer responsibilities
- Cabin configuration
- Weapons configuration

Demonstrate:

- Aircraft systems knowledge
- Pre/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.

Prerequisites: NTPS-6002

External Syllabus Support: MCAT as required for Maintain POI only.

3.13.2 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.

CRM-6003 1.5 365 B,R,M * G CRM CLASS

Goal: Conduct annual CH-53 CRM ground training IAW CH-53 NATOPS, CNAF M-3710.7 and OPNAVINST 1542.7

Requirement:

Instructor: CRMI or CRMF required

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

CRM-6101 1.5 365 B,R,M (NS) A/S 1+ CH-53/MCAT

Goal: Practice/review CRM principles presented in the CH-53 annual CRM ground training during flight evaluation.

Requirement:

Instructor: CRMI or CRMF required

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.

Prerequisite: CRM-6003

External Syllabus Support: MCAT as required for Maintain POI only.

3.13.3 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.

At the completion of the 6610 the CC is considered 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-53

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:

Instructor: NI/ANI

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.

Prerequisite: Required reading: NATOPS Ch.10, NFM-700, A1-H53CE-VIB-000, A1-H53CE-580-000, 4790.2.

FCF-6602 0.5 * B D G ASM

Goal: Verify maintenance qualification and functional items have been met in Advanced Skills Management (ASM) Online.

Instructor: NI/ANI

Performance Standards: Verify successful completion of the Functional Check Flight Training Syllabus in ASM Online.

Prerequisite: FCF-6601

FCF-6610 1.5 1095 B,R,M D A 1 CH-53

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.

Instructor: NI/ANI

Practice:

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 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 FCF status to perform evaluation.

Prerequisite: FCF-6601, FCF-6602, CAL-2210

Ground Academic Training: IAW Maintenance Ground ASM training

3.14 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.

3.15 FRS CH-53E CREW CHIEF T&R MATRIX (0000, 1000, & 5000 PHASE)

CH-53E CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																	
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT CONV
ACADEMICS/CBT/LAB/FRSI/EVAL (ACAD)																	
ACAD	CBT	0100	(U) CH-53E HISTORY	X		1.0						G		*	0200		0100
	CBT	0101	(U) CH-53E PUBLICATIONS	X		1.0						G		*	0100		0101
	CBT	0102	(U) FAMILIARIZATION (INTERIOR)	X		1.0						G		*	0101		0102
	CBT	0103	(U) FAMILIARIZATION (EXTERIOR)	X		1.0						G		*	0102		0103
	CBT	0104	(U) APP OPERATION	X		1.5						G		*	0103		0104
	CBT	0105	(U) BLADE/PYLON FOLD & SPREAD	X		1.0						G		*	0103		0105
	CBT	0106	(U) EMERGENCY PROCEDURES	X		1.0						G		*	0103		0106
	CBT	0107	(U) TAXI/TAKEOFF/IN-FLIGHT CHECKS & PROCEDURES	X		1.0						G		*	0103		0107
	CBT	0108	(U) INTERNAL CARGO HANDLING	X		1.0						G		*	0103		0108
	CBT	0109	(U) SINGLE AND DUAL POINT EXTERNAL LIFT	X		1.0						G		*	0103		0109
	CBT	0110	(U) BEARING MONITOR SYSTEM	X		1.0						G		*	0103		0110
	CBT	0111	(U) INTRO TO THE IMDS	X		1.0						G		*	0103		0111
	CBT	0112	(U) INTRO TO THE IMDS FLIGHT SYSTEMS	X		1.0						G		*	0103		0112
	ACAD	0200	(U) INTRODUCTION TO THE COURSE	X		2.0						G		*		CHECK-IN	0200
	ACAD	0201	(U) SAFETY PROCEDURES	X		1.5						G		*	0103		0201
	ACAD	0202	(U) GROUND HANDLING PROCEDURES	X		1.5						G		*	0103		0202
	ACAD	0203	(U) DAILY INSPECTION (INTERIOR)	X		1.0						G		*	0201,0202		0203
	ACAD	0204	(U) DAILY INSPECTION (E-BAYS) ELECTRONICS COMPARTMENTS	X		1.5						G		*	0201,0202		0204
	ACAD	0205	(U) DAILY INSPECTION (LANDING GEAR)	X		1.0						G		*	0201,0202		0205
	ACAD	0206	(U) DAILY INSPECTION (REFUEL PANEL/AUX TANKS/FUSELAGE & SPONSON REFUEL)	X		1.5						G		*	0201,0202		0206
	ACAD	0207	(U) DAILY INSPECTION (ENG/NGB, AND EAPS	X		1.5						G		*	0201,0202		0207
	ACAD	0208	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON)	X		1.5						G		*	0201,0202		0208
	ACAD	0209	(U) DAILY INSPECTION (TDS & DISCONNECT) TAIL DRIVE SHAFTS	X		1.0						G		*	0201,0202		0209
	ACAD	0210	(U) DAILY INSPECTION (TAIL SKID/IGB/TGB/PYLON/STABILIZER/TAIL ROTOR SERVO)	X		1.5						G		*	0201,0202		0210
	ACAD	0211	(U) DAILY INSPECTION (TRB & TRH) TAIL ROTOR HEAD	X		1.0						G		*	0201,0202		0211
	ACAD	0212	(U) DAILY INSPECTION (MGB, PRIMARY SERVO, & FLIGHT CONTROLS)	X		1.5						G		*	0201,0202		0212
	ACAD	0213	(U) DAILY INSPECTION (2 ND STAGE/UTILITY & ENG START HYDRAULICS	X		1.5						G		*	0201,0202		0213
	ACAD	0214	(U) DAILY INSPECTION (AGB/APP COMPARTMENT) APP OPERATION	X		1.5						G		*	0201,0202		0214
	ACAD	0215	(U) DAILY INSPECTION (MRB & MRH) MAIN ROTOR HEAD & BLADES	X		1.0						G		*	0201,0202		0215
	ACAD	0216	(U) DAILY INSPECTION MISSION SYSTEMS	X		1.0						G		*	0201,0202,0108, 0109		0216
	ACAD	0217	(U) TURNAROUND INSPECTION	X		1.0						G		*	0201,0202		0217
	ACAD	0218	(U) APP START	X		1.0						G		*	0201,0202,0104		0218
	ACAD	0219	(U) BLADE AND PYLON FOLD/SPREAD	X		1.0						G		*	0202,0105		0219
	ACAD	0220	(U) PLANE CAPTAIN RESP	X		2.5						G		*			0220

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CH-53E CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																		
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT CONV	
	ACAD	0221	(U) EGRESS PROCEDURES	X		4.0						G		*	0201		0221	
	ACAD	0222	(U) AIRCREW RESPONSIBILITIES	X		3.5						G		*	0201,0202,0107		0222	
	ACAD	0223	(U) CRM	X		2.5						G		*			0223	
	ACAD	0224	(U) EXTERNALS	X		1.0						G		*	0109		0224	
	ACAD	0225	(U) TERRAIN FLIGHT (TERF)	X		1.0						G		*			0225	
	LAB	0300	(U) GROUND HANDLING PROCEDURES	X		2.5						G		*	0201,0202		0300	
	LAB	0301	(U) DAILY INSPECTION (INTERIOR) AIRCRAFT INTERIOR	X		2.5						G		*	0203		0301	
	LAB	0302	(U) DAILY INSPECTION (E-BAYS) ELECTRONICS COMPARTMENTS	X		1.5						G		*	0204		0302	
	LAB	0303	(U) DAILY INSPECTION (LANDING GEAR)	X		1.5						G		*	0205		0303	
	LAB	0304	(U) DAILY INSPECTION (REFRUEL PANEL, AUX TANKS, FUSELAGE & SPONSON)	X		1.0						G		*	0206		0304	
	LAB	0305	(U) DAILY INSPECTION (ENG/NGB & EAPS) ENGINES	X		2.0						G		*	0207		0305	
	LAB	0306	(U) DAILY INSPECTION (AFT MAIN ROTOR PYLON)	X		1.5						G		*	0208		0306	
	LAB	0307	(U) DAILY INSPECTION (TDS & DISCONNECT) TAIL DRIVE SHAFTS	X		1.0						G		*	0209		0307	
	LAB	0308	(U) DAILY INSPECTION (TAIL SKID/IGB/TGB/PYLONG/STABILIZER & TAIL ROTOR SERVO)	X		1.5						G		*	0210		0308	
	LAB	0309	(U) DAILY INSPECTION (TRB & TRH) TAIL ROTOR HEAD	X		1.0						G		*	0211		0309	
	LAB	0310	(U) DAILY INSPECTION (MGB/PRIMARY SERVO & FLIGHT CONTROLS)	X		1.5						G		*	0212		0310	
	LAB	0311	(U) DAILY INSPECTION (2 ND STAGE/UTILITY & ENGINE START HYDRAULIC SYSTEMS)	X		1.5						G		*	0213		0311	
	LAB	0312	(U) DAILY INSPECTION (APP/AGB COMPARTMENT)	X		1.5						G		*	0214		0312	
	LAB	0313	(U) DAILY INSPECTION (MRH & MRB)	X		1.5						G		*	0215		0313	
	LAB	0314	(U) DAILY INSPECTION (MISSION SYSTEMS)	X		1.5						G		*	0216		0314	
	LAB	0315	(U) TURNAROUND INSPECTION	X		1.5						G		*	0217		0315	
	LAB	0316	(U) APP START	X		1.0						G		*	0218		0316	
	LAB	0317	(U) DAILY INSPECTION	X		4.0						G		*	0201 - 0216		0317	
	LAB	0318	(U) EGRESS PROCEDURES	X		1.5						G		*	0221		0318	
	LAB	0319	(U) CARGO LOADING PROCEDURES	X		3.0						G		*	0108			
	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
	EVAL	0600	PLANE CAPT	X		2.0						G		*				0600
EVAL	0601	PLANE CAPTAIN REV	X		2.0						G		*	0600			0601	
ACAD TOTAL					75	115.5	0	0.0	0	0.0								

CH-53E CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																		
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT CONV	
FAMILIARIZATION (FAM)																		
FAM	FAM	1100	AIRCREW DUTIES	X						1.5	D	A	1	*			1100	
	FAM	1101	AIRCREW DUTIES 2	X						1.5	D	A	1	*	1100		1101	
	FAM	1102	EMERGENCY PROCEDURES	X						1.5	D	A	1	*	1101		1102	
	FAM	1103	AIRCREW DUTIES 3	X						1.5	D	A	1	*	1102		1103	
	FAM	1104	AIRCREW DUTIES/CRM	X						1.5	D	A	1	*	1103		1104	
	NFAM	1200	NIGHT SYSTEMS FAM	X						1.5	NS	A	1	*	1600	NITE LAB	1200	
	NFAM	1201	NIGHT SYSTEMS FAM	X						1.5	NS	A	1	*	1200		1201	
FAM TOTAL					0	0.0	0	0.0	7	10.5								
INTERNAL LOADING (INT)																		
INT	INT	1300	INTERNAL PLANNING	X						1.5	(N)	A/S	1	*	1104		1300	
	INT	1301	PASSENGERS/CARGO	X						1.5	(N)	A/S	1	*	1300		1301	
INT TOTAL					0	0.0	0	0.0	2	3.0								
FORMATION (FORM)																		
FORM	FORM	1500	FORMATION FLIGHT	X						2.0	D	A	2	*	1104		1500	
	FORM	1501	NIGHT FORMATION FLIGHT	X						2.0	NS	A	2	*	1201,1500		1501	
FORM TOTAL					0	0.0	0	0.0	2	4.0								
CONFINED AREA LANDINGS (CAL)																		
CAL	CAL	1600	CONFINED AREA LANDING	X						1.5	D	A	1	*	1104		1600	
	CAL	1601	SECTION CONFINED AREA LANDING	X						1.5	D	A	2	*	1600		1601	
	CAL	1602	NIGHT SYSTEMS (CAL)	X						1.5	NS	A	1	*	1201,1600		1602	
	CAL	1603	SECTION NIGHT SYSTEMS (CAL)	X						1.5	NS	A	2	*	1602		1603	
CAL TOTAL					0	0.0	0	0.0	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						1.5	D	A	1	*	1600, 1701		1702	
	EXT	1703	DUAL-POINT EXTERNAL	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						1.5	NS	A	1	*	1704		1705	
EXT TOTAL					0	0.0	2	3.0	4	6.0								
TERRAIN FLIGHT (TERF)																		
TERF	TERF	1801	INTRO TERF	X						1.5	D	A	1	*	1600		1801	
TERF TOTAL					0	0.0	0	0.0	1	1.5								

CH-53E CREW CHIEF T&R MATRIX (0000, 1000 AND 5000 PHASE) [CORE INTRODUCTION]																		
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	# ACAD	ACAD	# SIM	SIM	# FLT	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	NOTES	EVENT CONV	
CORE INTRODUCTION REVIEW (REV)																		
REV	REV	1900	STAN CHECK REV	X						2.0	(NS)	A	1	*	ALL 1000 FLTS		1900	
REV TOTAL					0	0.0	0	0.0	1	2.0								
CORE INTRODUCTION CHECK (CSIX)																		
CSIX	CSIX	1901	STAN CHECK	X						1.5	(NS)	A	1	*	1900		1901	
CSIX TOTAL					0	0.0	0	0.0	1	1.0								
CORE INTRODUCTION TOTAL					74	112.5	2	3.0	22	34.5								
CORE INTRODUCTION INSTRUCTOR TRAINING (5000 PHASE)																		
FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI)																		
FRSI	FRSI	5100	DAY FORM	X						1.5	D	A	2	*			5100	
	FRSI	5101	NIGHT FORM	X						1.5	NS	A	2	*			5101	
	FRSI	5102	DAY CAL	X						1.5	D	A	1	*			5102	
	FRSI	5103	NIGHT CAL	X						1.5	NS	A	1	*			5103	
	FRSI	5104	DAY TERF	X						1.5	D	A	1	*			5104	
	FRSI	5105	DAY EXT	X						1.5	D	A	1	*			5105	
	FRSI	5106	NIGHT EXT	X						1.5	NS	A	1	*			5106	
	FRSI	5107	STANDARDIZATION CHECK	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	*			5600	
	NSFI	5601	HLL FORM/SECTION CALS	X						1.5	NS	A	2	*			5601	
	NSFI	5602	HLL EXT	X						1.5	NS	A	1	*	5600,5601		5602	
NSFI TOTAL					0	0.0	0	0.0	3	4.5								

3.16 CH-53E CREW CHIEF ATTAIN AND MAINTAIN MATRIX (2000-8000 PHASE)

CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
CORE PHASE (2000)								
ACADEMICS (ACAD)								
	ACAD	CH53 CARGO OPERATIONS	2003			*		
	ACAD	AAR/ALE 47	2004			*		
	ACAD	APR-39	2012			*		
	ACAD	AAQ-24	2019			*		
	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	CARGO	2105	2105	2105	365	2003,2050,2052~N,2100	
	INT	PAX	2106	2106	2106	365	2003,2050,2052~N,2101	
FORMATION (FORM)								
FORM	FORM	DAY FORM	2110	2110	2110	365	2050	
CONFINED AREA LANDING (CAL)								
CAL	CAL	CALS	2210			*	2050	
	CAL	SECTION CALS	2211	2211	2211	365	2110,2210	2110
TERRAIN FLIGHT (TERF)								
TERF	TERF	TERF	2310			*	2050,2051	
	TERF	SECTION TERF	2311	2311	2311	365	2110,2310	2110,2310
EXTERNAL (EXT)								
EXT	EXT	SINGLE POINT	2410			*	2210	2210
	EXT	DUAL POINT	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	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421

CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
GROUND THREAT REACTION (GTR)								
GTR	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,2320~HLL,2321~HLL,2330~LLL,2331~LLL
AERIAL GUNNERY GAU-21 (AG)								
AG	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056, 2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813	2813	180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	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)								
NS HLL	HLL	HLL FORM	2120	2120	2120	180	2052,2110	2110
	HLL	HLL CALS	2220			*	2052,2210	2210
	HLL	HLL SEC CALS	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	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)								
NS LLL	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
MISSION PHASE (3000)								
ACADEMICS (ACAD)								
	ACAD	NEO EXECUTION	3002			*		
	ACAD	PERSONNEL RECOVERY	3004			*		
	ACAD	CH-53 TRAP TTPS	3005			*		
	ACAD	CASEVAC	3006			*		

CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
COMBAT ASSAULT TRANSPORT (CAT)								
CAT	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	ACAD	NEO EXECUTION	3002					
	CAT	CBT ASLT TRNSPT	3240	3240	3240	365	NSQ LLL, AGQ,2540, 3002	
AERIAL DELIVERY (AD)								
AD	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	EXT	SINGLE POINT	2410			*	2210	2210
	EXT	DUAL POINT	2411	2411		365	2210	2210,2410
	EXT	HLL SINGLE POINT	2420			*	2220,2410	2210,2220,2410

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CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
	EXT	HLL DUAL POINT	2421	2421	2421	180	2220,2411	2210,2220,2410,2411,2420
	EXT	LLL EXTERNALS	2430	2430	2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	AD	AERIAL DELVIERY	3340	3340	3340	365	NSQ LLL, AGQ,2430,2540	
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)								
TRAP	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	EXT	SINGLE POINT	2410			*	2210	2210
	EXT	DUAL POINT	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	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	ACAD	PERSONNEL RECOVERY	3004			*		
	ACAD	CH-53 TRAP TTPS	3005			*		
	TRAP	TRAP	3440	3440	3440	365	NSQ LLL, AGQ,3004,3005,2540	

CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
AERIAL EVACUATION (AE)								
AE	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	ACAD	(U) CASEVAC	3006			*		
	AE	AERIAL EVACUATION	3540	3540	3540	365	NSQ LLL, AGQ,3006,2540	
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 BATTLE FIELD I	4300			*		
HELICOPTER INSERTION & EXTRACTION (HIE)								
HIE	HIE	HELOCAST	4110	4110	4110	485	TERFQ,2106	2106
	HIE	RAPPEL	4140			*	2210,2920~NS,2930~LLL	2106
	HIE	PARA/OPS	4141			*	2920~NS,2930~LLL	2106

CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
BATTLEFIELD ILLUMINATION (BI)								
BI	BI	BATTLEFIELD ILLUM	4340	4340	4340	1095	NSQ-LLL, AGQ	
TERRAIN FLIGHT EXTERNALS (TERF EXT)								
TERF EXT	TERF EXT	DAY TERF EXTERNALS	4412			*	2310,2410~SINGLE POINT,2411~DUAL POINT – 2310	2310,2410~SINGLE POINT,2411~DUAL POINT – 2310 is the only event automated in M-SHARP.
	TERF EXT	NS TERF EXTERNALS	4440	4440	4440	365	2320~NS,2420~NS,2330~LLL,2430~LLL,	4412
DEFENSIVE MEASURES (DM)								
DM	DM	RW DM	4510	4510	4510	365	TERFQ,2004,2019,4051,4052	2110,2310,2311
	DM	FW DM	4511	4511	4511	365	TERFQ,2004,2019,4051,4052	2110,2310,2311
GROUND THREAT REACTIONS (GTR)								
GTR	GTR	RADAR GTR	4540	4540	4540	365	2004,2019,4051,4052,2311,2321~NS,2331~LLL	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	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	180	4810	2812,2813
	TG	NIGHT SECTION TG	4840	4840	4840	180	4811	2812,2813,2842,2843,4810,4811
MOVING TARGET GUNNERY (MTG)								
MTG	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 (only 2812 and 2842 will be automated in M-SHARP.
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	365	2920~HLL,2930~LLL	2110,2120,2210,2211,2220~HLL,2221~HLL,2910,2911,2920~ HLL,2230~LLL,2231~LLL,2930~LLL

CH-53E CREW CHIEF ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
RAPID INSERT/EXTRACTION (RIE)								
RIE	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052, 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	2004,2019,4051,4052, 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	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	2004,2019,4051,4052, 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	365		
	NTPS	CLOSED BOOK EXAM	6001	6001	6001	365	6000	
	NTPS	ORAL EXAM	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	365	6002	
CRM								
CRM	CRM	CRM GRND CLASS	6003	6003	6003	365		
	CRM	CRM FLT	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	

3.17 CH-53E CREW CHIEF T&R MATRIX (2000-6000 PHASE)

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
CORE PHASE (2000)																		
ACADEMICS (ACAD)																		
	ACAD	2003	(U) CH53 CARGO OPERTAIONS	X				1.0						G		*		
	ACAD	2004	(S) AAR / ALE 47	X				1.0						G		*		2004
	ACAD	2012	(S) APR-39	X				1.0						G		*		2012
	ACAD	2019	(S) AAQ-24	X				1.0						G		*		2019
	ACAD	2050	(U) EA TAC AIRCREW CON	X				1.0						G		*		2050
	ACAD	2051	(U) EA TERF	X				1.0						G		*		2051
	ACAD	2052	(U) EA NS TRAINING	X				1.0						G		*		2052
	ACAD	2053	(U) EA AERIAL GUNNERY	X				1.0						G		*		2053
	ACAD	2055	(U) EA GAU-21	X				1.0						G		*		2055
	ACAD	2056	(U) EA LASER AIMING	X				1.0						G		*		2056
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						0.0			(N)	A/S	1	*		2100
	INT	2101	PAX LAB	X						0.0			(N)	A	1	*		2101
	INT	2105	CARGO	X	X	X						1.5	(NS)	A	1	365		2105
	INT	2106	PAX	X	X	X						1.5	(NS)	A	1	365		2106
INT TOTAL							1	1.0	2	0.0	2	3.0						
FORMATION (FORM)																		
FORM	FORM	2110	DAY FORM	X	X	X						1.5	D	A	2	365		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						1.5	D	A	2	365		2211
CAL TOTAL							0	0.0	0	0.0	2	3.0						

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
TERRAIN FLIGHT (TERF)																		
TERF	ACAD	2051	(U) EA TERF	X														
	TERF	2310	TERF	X							1.5	D	A/S	1	*		2310	
	TERF	2311	SECTION TERF	X	X	X					1.5	D	A	2	365		2311	
TERF TOTAL							0	0.0	0	0.0	2	3.0						
EXTERNAL (EXT)																		
EXT	EXT	2410	SINGLE POINT	X							1.5	D	A	1	*		2410	
	EXT	2411	DUAL POINT	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					1.5	LLL	A	1	180		2430	
EXT TOTAL							0	0.0	0	0.0	5	7.5						
GROUND THREAT REACTION (GTR)																		
GTR	ACAD	2004	(S) AAR / ALE 47	X														
	ACAD	2012	(S) APR-39	X														
	ACAD	2019	(S) AAQ-24	X														
	GTR	2540	NON RADAR GTR	X	X	X					1.5	(NS)	A/S	2	365		2540	
GTR TOTAL							0	0.0	0	0.0	1	1.5						
AERIAL GUNNERY GAU-21 (AG)																		
AG	ACAD	2053	(U) EA AERIAL GUNNERY	X														
	ACAD	2055	(U) EA GAU-21	X														
	ACAD	2056	(U) EA LASER AIMING	X														
	AG	2800	GAU-21 LAB	X				3.0					D	G		*	2800	
	AG	2801	GAU-21 MWPC LAB	X				2.0					D	G		*	2801	
	AG	2802	WEAPON PROCEDURES LAB	X				2.0					D	S/A		*	2802	
	AG	2812	DAY AG	X							1.5	D	A	1	*		2812	
	AG	2813	DAY SEC AG	X	X	X					1.5	D	A	2+	180		2813	
	AG	2842	NIGHT AG	X							1.5	NS	A	1	*		2842	
	AG	2843	NIGHT SEC AG	X	X	X					1.5	NS	A	2+	180		2843	
AG TOTAL							3	7.0	0	0.0	4	6.0						
TACTICS (TAC)																		

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
TAC	ACAD	2058	(U) EA ESCORT OPERATIONS	X														
	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
	ACAD	2050	(U) EA TAC AIRCREW CON	X														
TOTAL TAC STAGE							0	0.0	0	0.0	2	4.0						
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)																		
NS HLL	HLL	2120	HLL FORM	X	X	X						1.5	HLL	A	2	180		2120
	HLL	2220	HLL CALS	X								1.5	HLL	A	1	*		2220
	HLL	2221	HLL SEC CALS	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						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	0.0	0	0.0	6	9.5						
NIGHT SYSTEM LOW LIGH LEVEL (LLL)																		
NS LLL	LLL	2230	LLL CALS	X								1.5	LLL	A	1	*		2230
	LLL	2231	LLL SEC CALS	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						1.5	LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	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							15	19.0	2	0.0	30	47.0						
MISSION PHASE (3000)																		
ACADEMICS (ACAD)																		
	ACAD	3002	(U) NEO EXECUTION	X				1.5						G		*		3002
	ACAD	3004	(S) PERSONNEL RECOVERY	X				1.0						G		*		3004
	ACAD	3005	(S) CH53 SPECIFIC TRAP TTPS	X				0.8						G		*		3005
	ACAD	3006	(U) CASEVAC	X				0.5						G		*		3006
ACAD TOTAL							4	3.8	0	0.0	0	0.0						

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
COMBAT ASSAULT TRANSPORT (CAT)																		
CAT	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	ACAD	3002	NEO EXECUTION	X				1.5						G		*		3002
	CAT	3240	CMBT ASSAULT TRANSPORT	X	X	X						2.0	(NS)	A	1+	365		3240
CAT TOTAL							1	1.5	0	0.0	1	2.0						
AERIAL DELIVERY (AD)																		
AD	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	EXT CSP		2410,2411,2420,2421,2430															
	AD	3340	AERIAL DELVIERY	X	X	X						2.0	(NS)	A	1+	365		3340
AD TOTAL							0	0.0	0	0.0	1	2.0						
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)																		
TRAP	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	EXT CSP		2410,2411,2420,2421,2430															
	ACAD	3004	(S) PERSONNEL RECOVERY	X				1.0						G		*		3004
	ACAD	3005	(S) CH53 SPECIFIC TRAP TTPS	X				0.8						G		*		3005
TRAP	3440	TRAP	X	X	X						2.0	(NS)	A	1+	365		3440	
TRAP TOTAL							2	1.8	0	0.0	1	2.0						

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
AERIAL EVACUATION (AE)																		
AE	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	ACAD	3006	(U) CASEVAC	X				0.5						G		*		3006
	AE	3540	AERIAL EVACUATION	X	X	X						2.0	(NS)	A	1+	365		3540
AE TOTAL							1	0.5	0	0.0	1	2.0						
TOTAL MISSION PHASE								3.8	0	0.0	5	10.0						
CORE PLUS PHASE (4000)																		
ACADEMICS (ACAD)																		
	ACAD	4011	(U) EA ADGR	X				1.0						G		*		4011
	ACAD	4050	(U) EA ELECT WARFARE	X				1.0						G		*		4050
	ACAD	4051	(U) EA DM/GTR PART 1	X				1.0						G		*		4051
	ACAD	4052	(U) EA DM/GTR PART 2	X				1.0						G		*		4052
	ACAD	4053	TRAINING THE TAIL GUNNER	X				1.0						G		*		4053
ACAD TOTAL							5	5.0	0	0.0	0	0.0						
HELICOPTER INSERTION & EXTRACTION (HIE)																		
HIE	HIE	4110	HELOCAST	X	X	X						1.5	D	A	1	485		4110
	HIE	4140	RAPPEL	X								1.5	(NS)	A	1	*		4140
	HIE	4141	PARA/OPS	X								1.5	(NS)	A	1	*		4141
HIE TOTAL							0	0.0	0	0.0	3	4.5						
BATTLEFIELD ILLUMINATION (BI)																		
BI	BI	4340	BATTLEFIELD ILLUMINATION	X	X	X						1.5	NS	A	1	1095		4340
BI TOTAL							0	0.0	0	0.0	1	1.5						

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
TERRAIN FLIGHT EXTERNALS (TERF EXT)																		
EXT	TERF EXT	4412	DAY TERF EXTERNALS	X								1.5	D	A/S	1	*		4412
	TERF EXT	4440	NS TERF EXTERNALS	X	X	X						1.5	NS	A	1	365		4440
TERF EXT TOTAL							0	0.0	0	0.0	2	3.0						
DEFENSIVE MEASURES (DM)																		
DM	ACAD	4051	(U) EA DM/GTR PART 1	X														
	ACAD	4052	(U) EA DM/GTR PART 2	X														
	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
DN TOTAL							0	0.0	0	0.0	2	3.0						
GROUND THREAT REACTIONS (GTR)																		
GTR	ACAD	4050	(U) EA ELECT WARFARE	X														
	GTR	4540	RADAR GTR	X	X	X						1.5	(NS)	A	2	365		4540
GTR TOTAL							0	0.0	0	0.0	1	1.5						
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)																		
CBRN	CBRN	4600	CBRN	X	X	X				1.5			(NS)	S/A		1095		4600
CBRN TOTAL							0	0.0	1	1.5	0	0.0						
FIELD CARRIER LANDING PRACTICE (FCLP)																		
FCLP	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	0	0.0	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-53E 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	M	#	ACAD	#	SIM	#	FLT						
TAIL GUNNERY (TG)																		
TG	ACAD	4053	TRAINING THE TAIL GUNNER	X														
	TG	4800	STATIC TG TRAINING	X				1.5					D	S/A	1	*		4800
	TG	4810	DAY TG	X							1.5	D	A	1	*		4810	
	TG	4811	DAY SECTION TG	X	X	X					1.5	D	A	2	180		4811	
	TG	4840	NIGHT SECTION TG	X	X	X					1.5	NS	A	2	180		4840	
TG TOTAL							1	1.5	0	0.0	3	4.5						
MOVING TARGET GUNNERY (MTG)																		
MTG	MTG	4841	MTG	X							1.5	(NS)	A/S	1+	*		4841	
MTG TOTAL							0	0.0	0	0.0	1	1.5						
TACTICS (TAC)																		
TAC	TAC	4940	DIV TAC	X	X	X					2.0	(NS)	A	3+	365		4940	
	TAC	4941	URBAN TAC	X	X	X					2.0	(NS)	A	2	365		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	
	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	3	5.0						
ADGR																		
ADGR	ACAD	4011	(U) EA ADGR	X														
	GTR	2540	NON RADAR GTR	X	X	X					1.5	(NS)	A/S	2	365		2540	
	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	4	6.5						

CH-53E 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	M	#	ACAD	#	SIM	#	FLT						
EXPEDITIONARY SEA BASED (SEA)																		
SEA	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A/S	2	365		2540
	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	3	5.0						
INSTRUCTOR TRAINING PHASE (5000)																		
AIRCRAFT PARACHUTE FLARE INSTRUCTOR (APFI)																		
APFI	APFI	5300	APFI STATIC	X	X							1.5	(NS)	A/S	1	*		5300
	APFI	5301	APFI EXECUTION	X	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	X			3.0					D	A	1	*		5400
	AGI	5401	AGI STATIC TRAINING	X	X			1.0					D	A	1	*		5401
	AGI	5402	AGI STATIC TRAINING	X	X			3.0					D	A	1	*		5402
	AGI	5403	MTG	X								1.5	(NS)	A	1+	*		5403
	AGI	5404	NS SEC AG	X								1.5	NS	A	2	*		5404
	AGI	5405	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	X							1.5	NS	A	2	*		5407
	AGI	5408	NS SEC TG	X	X							1.5	NS	A	2	*		5408
AGI TOTAL							3	7.0	0	0.0	6	9.0						
TERRAIN FLIGHT INSTRUCTOR (TERFI)																		
TERFI	TERFI	5700	DAY TERF/NAV/EXT	X	X							2.0	D	A	1	*		5700
	TERFI	5701	DAY SECTION TERF/NAV	X	X							2.0	D	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	X							2.0	D	A	2	*		5802
DMI TOTAL							0	0.0	0	0.0	3	5.0						

CH-53E 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	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	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		3.0						G		365	X	6000
	NTPS	6001	CLOSED BOOK EXAM	X	X	X		1.0						G		365	X	6001
	NTPS	6002	ORAL EXAM	X	X	X		2.0						G		365	X	6002
	NTPS	6004	MONTHLY EP QUIZ	X	X	X		1.0						G		30	X	
	NTPS	6005	QUARTERLY EP EVALUATION	X	X	X		1.0						A/S		90	X	
	NTPS	6100	NATOPS EVALUATION FLIGHT	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		1.5						G		365	X	6003
	CRM	6101	CRM FLT	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	1	*		6601
	FCF	6602	VERIFY ASM QUALS	X				.5					D	G		*		6602
	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						

3.18 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-53E HISTORY			
CBT-0101	(U) CH-53E 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 (E-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 ND STAGE/UTILITY & ENG START HYDRAULIC SYSTEMS)			
ACAD-0214	(U) DAILY INSPECTION (AGB/APP COMPARTMENT)			
ACAD-0215	(U) DAILY INSPECTION (MRB & MRH)			

Date

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-0216	(U) DAILY INSPECTION (MISSION SYSTEMS)			
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 (E-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 ND 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 LOADING 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			

[illegible]

3.19 AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER

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-2004	(S) AAR/ALE-47			
ACAD-2012	(S) APR-39			
ACAD-2019	(S) AAQ-24			
ACAD-2050	(U) EA Tactical AC considerations & responsibility			
ACAD-2051	(U) EA Terrain flight for enlisted aircrew			
ACAD-2052	(U) EA Night vision training			
ACAD-2053	(U) EA Fundamentals of aerial gunnery			
ACAD-2055	(U) EA GAU-21 .50 caliber machine gun			
ACAD-2056	(U) EA Laser aiming devices			
ACAD-2058	(U) EA Basic principles of Escort operations			
MISSION SKILL PHASE (3000)				
ACAD-3002	(U) NEO EXECUTION			
ACAD-3004	(S) PERSONNEL RECOVERY			
ACAD-3005	(S) CH53 SPECIFIC TRAP TTPS			
ACAD-3006	(U) CASEVAC			
CORE PLUS SKILL PHASE (4000)				
ACAD-4011	(U) EA Aviation Delivered Ground Refueling TBFDS (CH-53E)			
ACAD-4050	(U) EA Basic principles of Electronic Warfare			
ACAD-4051	(U) EA Defensive Measures			
ACAD-4052	(U) EA Defensive Measures part 2 (CH-53)			
ACAD-4053	(U) EA Training the Tail Gunner			
ACAD-4300	(U) EA Battle Field Illumination			

ENLISTED AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET ACADEMIC TRACKER[illegible]

CHAPTER 2

CH-53E PILOT (MOS 7566)

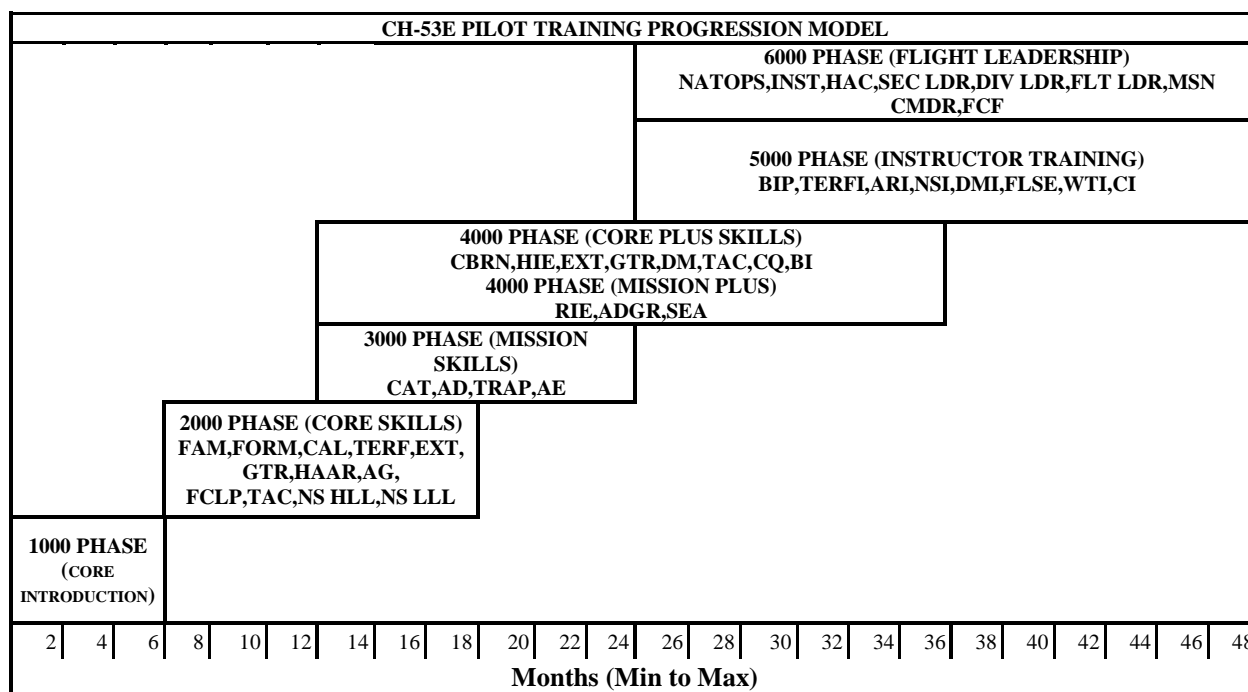
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CHAPTER 2

CH-53E PILOT 7566

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 7566 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 AvPlan.

2.2 PROGRAMS OF INSTRUCTION (POI)

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

CH-53E PILOT Basic POI (Average Time-to-Train)		
WEEKS	COURSE	PERFORMING ACTIVITY
24	CH-53E Core Introduction	HMHT-302
40	Core Training	Tactical Squadron
5	Mission Training	Tactical Squadron

Model Conversion. Pilots selected for model conversion to the CH-53E shall be assigned to the Basic POI. The following Basic POI events shall be waived at the FRS: 1101, 1102, 1103, 1104, 1107, 1113, 1115, 1117, 1119, 1300, 1303, 1304, 1400, 1502, 1600, 1602, 1603, 1604 and 1800. 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.

2.2.2 Modified Refresher (MR) POI. CH-53E 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-53E PILOT Modified Refresher POI (Average Time-to-Train)		
WEEKS	COURSE	PERFORMING ACTIVITY
4	CH-53E Core Introduction	Fleet Replacement Squadron

2.2.3 Refresher (R) POI, CH-53E 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-53E PILOT Refresher POI (Average Time-to-Train)		
WEEKS	COURSE	PERFORMING ACTIVITY
6	CH-53E Core Introduction	Fleet Replacement Squadron
10	Core Training	Tactical Squadron
5	Mission Training	Tactical Squadron

Tactical Squadron Refresher/Conversion Syllabus (2000-8000). The Squadron Refresher and Conversion Syllabus is predicated on the experience of the refresher and/or conversion pilot. A pilot in the squadron refresher syllabus should fly all R coded events. The Squadron Commanding Officer may tailor the squadron refresher or conversion syllabus to fit the experience of the refresher or conversion 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.

2.3 PROFICIENCY & CURRENCY

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

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

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

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

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

Proficiency Status. Proficiency is a "Yes/No" status by skill assigned to an individual. When an individual attains and maintains Core 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 Skill Currency. Currency is a control measure used to provide an additional margin of safety based on exposure frequency to a particular skill and applies to all MOS's that must comply with NATOPS and CNAF requirements. It is a measure of time since the last event demanding that specific skill. For example, currency determines minimum altitudes in

rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for aircrew individual type mission profiles can be found in Chapter 3.

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-53E PILOT REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD)	
INDIVIDUAL CH-53E 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	2011,2310,2311R
NSQ HLL	2031,S2102,2120R,2220,2221R,2320,2321R,2920R
NSQ-LLL	NSQ HLL,2230,2231R,2330,2331R,2930R
FRS NSQ	5506,2120,2220,2221
DM	2016,2021,4001-4005,4510R,4511R
DAY CQ	4711
UNAIDED CQ	4741
NVG CQ	4742
Designation	Event Requirements
H2P	(Core Introduction phase complete),1902
HAC	(Core and Mission phase complete),S5100,S5101,5110,6120,6121,6122R
BIP	(Core and Mission phase complete),S5100,S5101,5110,6120,6121,6122R
SEC LDR	6200,6201,6202,6203R
DIV LDR	6300,6301 6302R
FLT LDR	6400
AIR MSN CDR	6500
FLSE	6400, 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	5805, Per MAWTS-1 WTI Course Catalog
CRMI	6100, See CNAFINST 1542.7 Series
CRMF	6100, See CNAFINST 1542.7 Series
FRSI	5500, 5502,5503,5504,5505,5506
NI	6100, Evaluated by Model Manager, Designated by Squadron CO
NE	6100, Designated by Model Manager CO
ANI	6100, given by a Squadron NATOPS Instructor
FCPE	6618, Designated by Model Manager CO
TSI	5410,5411
NII	6102, Designated by Squadron CO
FCP	6617, IAW CNAFINST 4790 and command specific directives
FCPI	6618, given by Model Manager (Functional Check Pilot Instructor)
AFCPI	6618, given by a FCPI (Assistant Functional Check Pilot Instructor)
Items in parenthesis () are not tracked by M-SHARP for proficiency	

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 M-SHARP 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 (0001-1007)
CBT-0001	INTRO TO THE CH-53
CBT-0002	THE AUXILIARY POWER PLANT
CBT-0003	ENGINES
CBT-0004	THE ELECTRICAL SYSTEM
CBT-0005	HYDRAULIC SYSTEM
CBT-0006	BLADE/PYLON FOLD AND ROTOR BRAKE SYSTEM
CBT-0007	LANDING GEAR AND WHEEL BRAKE SYSTEM
CBT-0008	FUEL SYSTEM
CBT-0009	DRIVE TRAIN
CBT-0010	CHIP DETECTING SYSTEM
CBT-0011	ROTOR SYSTEM
CBT-0012	FLIGHT CONTROL SYSTEM
CBT-0013	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)
CBT-0014	MISCELLANEOUS SYSTEM
CBT-0015	COMMUNICATION AND NAVIGATION SYSTEMS
CBT-0016	PREFLIGHT PLANNING AND PROCEDURES
CBT-0017	AIRCRAFT SURVIVABILITY EQUIPMENT
CBT-0018	INTRODUCTION TO THE FLIGHT PHASE
CBT-0019	NIGHT FLIGHT
CBT-0020	INSTRUMENT FLIGHT AND NAVIGATION
CBT-0021	VFR NAVIGATION, GPS AND HELICOPTER NIGHT VISION SYSTEMS (HNVS)
CBT-0022	FORMATION FLIGHT
CBT-0023	CONFINED AREA LANDINGS
CBT-0024	EXTERNAL CARGO OPERATIONS
ACAD-0101	THE AUXILIARY POWER PLANT
ACAD-0102	ENGINES
ACAD-0103	ELECTRICAL SYSTEM
ACAD-0104	HYDRAULIC SYSTEM
ACAD-0105	FUEL SYSTEM
ACAD-0106	DRIVE TRAIN
ACAD-0107	ROTOR SYSTEM
ACAD-0108	FLIGHT CONTROL SYSTEM
ACAD-0109	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)
ACAD-0110	COMMUNICATION AND NAVIGATION SYSTEMS
ACAD-0111	INTRODUCTORY TACTICS CREW RESOURCE MANAGEMENT (CRM) INITIAL

T&R CODE	ACADEMIC SYLLABUS
	FRS ACADEMIC PHASE (0001-1007)
ACAD-0112	INTRODUCTION TO TACTICS
LAB-1000	APP/ ENGINE
LAB-1001	FUEL SYSTEM
LAB-1002	DRIVE TRAIN AND ROTOR SYSTEMS
LAB-1003	FLIGHT CONTROL SYSTEM
LAB-1004	MISSION PLANNING
LAB-1005	PREFLIGHT INSPECTION PROCEDURES
T&R CODE	ACADEMIC SYLLABUS
	CORE SKILL PHASE (2000-2999)
FAM STAGE	
ACAD-2000	(U) CH-53 GPS
ACAD-2001	(U) ARC-210 SINGARS AND HAVEQUICK(*)
ACAD-2003	(U) CH-53 INTERNAL CARGO OPERATIONS
ACAD-2004	(S) CH-53 AAR/ALE-47 (*)
ACAD-2005	(U) CH-53 TACFORM
CAL STAGE	
ACAD-2007	(U) DESERT AREA OPERATIONS(*)
ACAD-2008	(U) MOUNTAIN OPERATIONS(*)
ACAD-2009	(U) COMBAT AIRCREW COORDINATION
ACAD-2010	(U) AN/AVS-7 CH-53 ANVIS HUD
TERF STAGE	
ACAD-2011	(U) TERRAIN FLIGHT
ACAD-2012	(S) CH-53 APR-39 (*)
ACAD-2013	(S) SURFACE TO AIR THREAT TO THE MAGTF
EXT STAGE	
ACAD-2014	(S) HEAVY LIFT OPERATIONS(*)
ACAD-2015	(U) ASSAULT SUPPORT TO ARTILLERY
GTR STAGE	
ACAD-2016	(U) CH-53 DM/GTR I
ACAD-2017	(S) IR SAM THREAT TO ASSAULT SUPPORT(*)
ACAD-2019	(S) AAQ-24(*)
ACAD-2020	(S) ADA THREAT TO ASSAULT SUPPORT
ACAD-2021	(S) EVASIVE MANEUVERS AND COUNTER TACTICS
HAAR STAGE	
ACAD-2022	(U) HAAR(*)
AG STAGE	
ACAD-2024	(U) WEAPONS EMPLOYMENT TECHNIQUES
TAC STAGE	
ACAD-2027	(U) OBJECTIVE AREA PLANNING(*)
ACAD-2028	(S) RULES OF ENGAGEMENT
ACAD-2029	(U) EXECUTION CHECKLIST
ACAD-2030	(U) PROBLEM FRAMING(*)
HLL STAGE	
ACAD-2031	(U) ASSAULT AN/AVS-9 COMPONENTS AND PREFLIGHT PROCEDURES
ACAD-2032	(U) NVG SYSTEMS AND IMAGE CHARACTERISTICS
ACAD-2033	(U) NIGHT OPERATIONAL ENVIRONMENT
ACAD-2034	(U) NVG MISPERCEPTIONS AND ILLUSIONS
ACAD-2035	(U) NVD ROUTE CONSIDERATIONS
ACAD-2036	(U) NIGHT OPERATIONS AND PLANNING AIDS
LLL STAGE	
ACAD-2037	(U) HUMAN FACTORS
ACAD-2039	(U) CH-53 AN AAQ-29 FLIR
ACAD-2040	(S) ASSAULT SUPPORT ESCORT TACTICS
ACAD-2041	(U) BATTLEFIELD ILLUMINATION AND ITG PLANNING CONSIDERATIONS
ACAD-2042	(U) MULTI-FUNCTION COLOR DISPLAY

* Denotes annual academic training requirements.

T&R CODE	ACADEMIC SYLLABUS
	MISSION SKILL PHASE (3000)
AT STAGE	
ACAD-3002	(U) NEO EXECUTION

ACAD-3003	(U) INTELLIGENCE PREPARATION OF THE BATTLE SPACE
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TRAP STAGE	
ACAD-3004	(S) PERSONNEL RECOVERY
ACAD-3005	(S) TRAP TTPS
AE STAGE	
ACAD-3006	(U) CASEVAC
ACAD-3007	(U) CIRCADIAN RHYTHM AND FATIGUE
ACAD-3008	(U) INTRO TO NVG TACTICAL EMPLOYMENT

* Denotes annual academic training requirements.

T&R CODE	ACADEMIC SYLLABUS
	CORE PLUS SKILL PHASE (4000)
GTR STAGE	
ACAD-4000	(S) RF SAM
ACAD-4012	(S) RADAR PRINCIPLES
DM STAGE	
ACAD-4001	(S) DM GAME PLANNING
ACAD-4002	(U) CH-53 DM/GTR II
ACAD-4003	(U) HELICOPTER PS AND EM
ACAD-4004	(S) FW THREAT TO ASSAULT SUPPORT
ACAD-4005	(S) ATTACK HELICOPTER THREAT TO THE MAGTF
CQ STAGE	
ACAD-4014	(U) SHIPBOARD OPERATIONS
TAC STAGE	
ACAD-4006	(U) AVIATION DELIVERED GROUND REFUELING
ACAD-4007	(U) URBAN OPERATIONS
ACAD-4013	(U) CH-53 AIR COMMAND AND CONTROL (AC2)
RIE STAGE	
ACAD-4008	(U) CLOSE AIR SUPPORT (CAS)
ACAD-4009	(S) AIR ASSAULT OPERATIONS
ACAD-4010	(U) MAGTF TARGETING AND FIRE SUPPORT PLANNING
ADGR STAGE	
ACAD-4011	(U) TBFDS

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

T&R CODE	ACADEMIC SYLLABUS
	FLIGHT LEADERSHIP TRAINING PHASE (6000)
ACAD-6010	(U) TACTICAL FLIGHT BRIEFING
ACAD-6011	(U) AMC
ACAD-6012	(U) FCF READINGS
ACAD-6013	(U) FCF SEMINAR

T&R CODE	ACADEMIC SYLLABUS
	AVIATION CAREER PROGRESSION MODEL PHASE (8000)
CORE SKILL PHASE	
ACPM-8200	(U) MACCS AGENCIES, FUNCTIONS, AND CONTROL OF AIRCRAFT AND MISSILES
ACPM-8201	(U) MWCS BRIEF
ACPM-8202	(U) ACA AND AIRSPACE
ACPM-8210	(U) AVIATION GROUND SUPPORT
ACPM-8230	(U) ACE BATTLESTAFF
ACPM-8231	(U) BATTLE COMMAND DISPLAY
ACPM-8240	(U) SIX FUNCTIONS OF MARINE AVIATION(*)
ACPM-8241	(U) JTAR/ASR INTRODUCTION AND PRACTICAL APPLICATION
ACPM-8242	(U) SITE COMMAND PRIMER
ACPM-8250	(U) THEATER AIR GROUND SYSTEM (TAGS)

MISSION SKILL PHASE	
ACPM-8300	(U) AIR DEFENSE
ACPM-8310	(U) FORWARD ARMING AND REFUELING POINT (FARP) OPERATIONS
ACPM-8311	(U) MARINE CORPS TACTICAL FUEL SYSTEMS
ACPM-8320	(U) JOINT STRUCTURE AND JOINT AIR OPERATIONS
ACPM-8321	(U) JOINT AIR TASKING CYCLE PHASE 1: STRATEGY DEVELOPMENT
ACPM-8322	(U) JOINT AIR TASKING CYCLE PHASE 2: TARGET DEVELOPMENT
ACPM-8323	(U) JOINT AIR TASKING CYCLE PHASE 3: WEAPONNEERING AND ALLOCATION
ACPM-8324	(U) JOINT AIR TASKING CYCLE PHASE 4: JOINT ATO PRODUCTION
ACPM-8325	(U) JOINT AIR TASKING CYCLE PHASE 5: FORCE EXECUTION
ACPM-8326	(U) JOINT AIR TASKING CYCLE PHASE 6: COMBAT ASSESSMENT
ACPM-8340	(U) INTEGRATING FIRES AND AIRSPACE WITHIN THE MAGTF
ACPM-8350	(U) PHASING CONTROL ASHORE
ACPM-8351	(U) TACRON ORGANIZATIONS AND FUNCTIONS
SECTION LEAD SYLLABUS	
ACPM-8630	(U) TACTICAL AIR COMMAND CENTER (TACC)
ACPM-8660	(U) JOINT OPERATIONS INTRODUCTION
DIVISION LEAD SYLLABUS	
ACPM-8640	(U) JOINT DATA NETWORK
ACPM-8641	(S) MAGTF THEATER AND NATIONAL ISR EMPLOYMENT
FLIGHT LEAD SYLLABUS	
ACPM-8620	(U) ESG/CSG INTEGRATION

* 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 ATF 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. Standardized ATFs are maintained by the T&R sponsor, MAWTS-1, on the MAWTS-1 website:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

From this site, click on “CH-53 Library”, then “Pilot Training Officer References”, and finally “APR and ATF Product Templates”.

EATFs may be completed in MSHARP instead of a standardized paper ATF. To account for EATFs in an APR, add “(MSHARP)” to the “Instructor” column on the appropriate line in the Pilot APR Tracking Matrix.

All EATFs shall include the following generic graded items for all simulator and flight events: Mission Analysis, Time Management, Mission Products, Brief Delivery, Professionalism, Airwork, Communications, CRM, NATOPS adherence, Navigation/Map Study.

All pilots will have an APR. The squadron training officer shall ensure each ATF is entered in section 3 of the APR or that the EATF is documented on the Pilot APR Tracking Matrix.

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.

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, at least 30 minutes after official sunset
(N)	May be conducted day or night. If at night, aided or unaided.
NS	Shall be conducted at night aided under High Light Level or Low Light Level at least 30 minutes after official sunset.
HLL	Shall be conducted at night aided under High Light Level conditions.
LLL	Shall be conducted at night aided under Low Light Level conditions.
(NS)	May be conducted day or night. If at night, shall be aided under High Light Level or Low Light Level at least 30 minutes after official sunset.
(HLL)	May be conducted day or night. If at night, shall be aided and under High Light Level conditions.
(LLL)	May be conducted day or night. If at night, shall be aided and under Low Light Level conditions.
N*	Shall be conducted at night unaided, at least 30 minutes after official sunset.
(N*)	May be conducted day or night. If at night, shall be unaided.
D/NS	Shall be flown both day and night conditions, unless flown in the aircraft, in which case the event may be flown during day or night conditions

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

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 (1000)

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

General.

Academic/Ground Training. The following Core Introduction phase 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. All students shall complete system CBT-0001 through CBT-0017, ACAD-0101 through ACAD-0111, and LAB-1000 through LAB-1004 during Systems Ground School.

The Commanding Officer of the CH-53E FRS 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.

CBTs are available at <https://mcalsms.usmc.mil> under "Online Course Catalog". Search keyword "CH-53E".

The CO of the CH-53E FRS has waiver authority over any event within Ground School for the respective syllabus.

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

CORE INTRODUCTION PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.7.1	2-12
FAMILIARIZATION (FAM)	2.7.2	2-24
NIGHT FAMILIARIZATION (NFAM)	2.7.3	2-33
INSTRUMENT (INST)	2.7.4	2-34
NAVIGATION (NAV)	2.7.5	2-37
FORMATION (FORM)	2.7.6	2-38
CONFINED AREA LANDINGS (CAL)	2.7.7	2-40
EXTERNALS (EXT)	2.7.8	2-41
TERRAIN FLIGHT (TERF)	2.7.9	2-44
TACTICS (TAC)	2.7.10	2-46
REVIEW (REV)	2.7.11	2-46
CORE INTRODUCTION CHECK (H2P)	2.7.12	2-47

2.7 CORE INTRODUCTION STAGES

2.7.1 Academics (ACAD)

ACADEMICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CBT-0001	1.0	*	B,R,MR, CIUT		G		CH-53E INTRO
CBT-0002	1.0	*	B,R,MR, CIUT		G		APP
CBT-0003	2.5	*	B,R,MR, CIUT		G		ENGINES
CBT-0004	2.0	*	B,R,MR, CIUT		G		ELECTRICAL
CBT-0005	2.0	*	B,R,MR, CIUT		G		HYDRAULIC
CBT-0006	1.5	*	B,R,MR, CIUT		G		BLADE/PYLON FOLD
CBT-0007	1.5	*	B,R,MR, CIUT		G		LANDING GEAR / BRAKES
CBT-0008	1.5	*	B,R,MR, CIUT		G		FUEL SYSTEM
CBT-0009	2.5	*	B,R,MR, CIUT		G		DRIVE TRAIN
CBT-0010	1.0	*	B,R,MR, CIUT		G		CHIP DETECTION SYSTEM
CBT-0011	1.0	*	B,R,MR, CIUT		G		ROTOR SYSTEM
CBT-0012	3.0	*	B,R,MR, CIUT		G		FLIGHT CONTROL SYSTEM
CBT-0013	2.0	*	B,R,MR, CIUT		G		AFCS
CBT-0014	3.0	*	B,R,MR, CIUT		G		MISC SYSTEMS
CBT-0015	2.0	*	B,R,MR, CIUT		G		COMM/NAV
CBT-0016	2.0	*	B,R,MR, CIUT		G		PREFLIGHT PLANNING
CBT-0017	2.5	*	B,R,MR, CIUT		G		ASE
CBT-0018	3.0	*	B,R,MR, CIUT		G		INTRO TO FLIGHT
CBT-0019	1.5	*	B,R,MR, CIUT		G		NIGHT FLIGHT
CBT-0020	2.5	*	B,R,MR, CIUT		G		INST FLIGHT AND NAV
CBT-0021	2.5	*	B,R,MR, CIUT		G		NAV,GPS,HNVs
CBT-0022	1.0	*	B,R,MR, CIUT		G		FORMATION FLIGHT
CBT-0023	1.0	*	B,R,MR, CIUT		G		CAL
CBT-0024	1.0	*	B,R,MR, CIUT		G		EXT
ACAD-0101	3.0	*	B,R,MR, CIUT		G		APP
ACAD-0102	3.0	*	B,R,MR, CIUT		G		ENGINES
ACAD-0103	3.0	*	B,R,MR, CIUT		G		ELECTRICAL SYSTEMS
ACAD-0104	3.0	*	B,R,MR, CIUT		G		HYDRAULIC SYSTEMS
ACAD-0105	2.0	*	B,R,MR, CIUT		G		FUEL SYSTEMS
ACAD-0106	2.0	*	B,R,MR, CIUT		G		DRIVE TRAIN

ACADEMICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-0107	2.0	*	B,R,MR, CIUT		G		ROTOR SYSTEM
ACAD-0108	2.0	*	B,R,MR, CIUT		G		FLIGHT CONTROL SYSTEM
ACAD-0109	2.0	*	B,R,MR, CIUT		G		AFCs
ACAD-0110	2.5	*	B,R,MR, CIUT		G		COMM/NAV SYSTEM
ACAD-0111	2.5	*	B,R,MR, CIUT		G		CRM
ACAD-0112	2.0	*	B,R,MR, CIUT		G		INTRO TO TAC
LAB-1000	2.0	*	B,R,MR, CIUT		G		APP/ENGINE
LAB-1001	1.0	*	B,R,MR, CIUT		G		FUEL SYSTEM
LAB-1002	2.0	*	B,R,MR, CIUT		G		DRIVE TRAIN/ROTOR SYS
LAB-1003	1.0	*	B,R,MR, CIUT		G		FLIGHT CONTROL SYSTEM
LAB-1004	7.0	*	B,R,MR, CIUT		G		MISSION PLANNING
LAB-1005	2.0	*	B,R,MR, CIUT	(N)	G	1 - Static	INTRO PREFLIGHT
LAB-1006	2.0	*	B,R,MR, CIUT	(N)	G	1 - Static	PRAC PREFLIGHT
LAB-1007	2.0	*	B,R,MR, CIUT	(N)	G	1 - Static	REV PREFLIGHT

CBT-0001 1.0 * B,R,MR,CIUT G Introduction to the CH-53

Goal. The PUI has completed all introduction modules with a basic understanding of the CH-53.

Requirement

Modules:

H-53 Series Historical Data and Publications
General Aircraft Information - Exterior
General Aircraft Information - Interior

CBT-0002 1.0 * B,R,MR,CIUT G The Auxiliary Power Plant

Goal. The PUI has completed all Auxiliary Power Plant (APP) modules with a basic understanding of the system.

Requirement

Modules:

APP System Overview and Components
APP System Operation

Prerequisite. 0001

CBT-0003 2.5 * B,R,MR,CIUT G Engines

Goal. The PUI has completed all Engine modules with a basic understanding of the system.

Requirement

Modules:

Engine Overview Components and Controls
Engine Lubrication System
Engine Fuel Supply System
Engine Start and Operation
Engine Air Particle Separator (EAPS)
Engine Anti-Ice
Engine Torque Indicating System
Engine Over torque Warning System
Engine Over speed Protection System
Engine Fire Protection

Prerequisite. 0001

CBT-0004 2.0 * B,R,MR,CIUT G The Electrical System

Goal. The PUI has completed all Electrical System modules with a basic understanding of the system.

Requirement

Modules:

Basic Electrical Theory and Symbology
Electrical Power System

Prerequisite. 0001

CBT-0005 2.0 * B,R,MR,CIUT G Hydraulic System

Goal. The PUI has completed all Hydraulic System modules with a basic understanding of the CH-53E hydraulic system.

Requirement

Modules:

Basic Hydraulic Theory and Symbology
Hydraulic Systems Overview
Flight Control Hydraulics
Utility Hydraulics
In-flight Hydraulic Replenishment System

Prerequisite. 0001

CBT-0006 1.5 * B,R,MR,CIUT G Blade/Pylon Fold and Rotor Brake System

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

Requirement

Modules:

Rotor Brake and Gust Lock Systems
Main Rotor Head Positioning System
Stick Position Indicating System
Blade Fold/Spread System
Pylon Fold/Spread System

Prerequisite. 0005

CBT-0007 1.5 * B,R,MR,CIUT G Landing Gear and Wheel Brake System

Goal. The PUI has completed all Landing Gear and Wheel Brake System modules with a basic understanding of the landing gear and wheel brake systems.

Requirement

Modules:

Landing Gear
Wheel Brake System
Tail Skid System
Landing Gear and Altitude Warning System

Prerequisite. 0005

CBT-0008 1.5 * B,R,MR,CIUT G Fuel System

Goal. The PUI has completed all Fuel System modules with a basic understanding of the CH-53E fuel system.

Requirement

Modules:

Airframe Fuel System Overview and Components
Refuel and Defuel Systems
Dump and Purge* Systems
Auxiliary Fuel Tank System

Fuel Indicating and Low Level Warning Systems

Prerequisite. 0001

CBT-0009 2.5 * B,R,MR,CIUT G Drive Train

Goal. The PUI has completed all modules with a basic understanding of the CH-53E drive train.

Requirement

Modules:

Powertrain Overview
Accessory and Nose Gear Boxes
Main Gear Box
Intermediate and Tail Gear Boxes
Drive Shaft and Disconnect Couplings

Prerequisite. 0001

CBT-0010 1.0 * B,R,MR,CIUT G Chip Detecting System

Goal. The PUI has completed the module with a basic understanding of the CH-53E chip detecting system, to include the engines and all gearboxes.

Requirement.

Modules:

Chip Detecting System

Prerequisite. 0003

CBT-0011 1.0 * B,R,MR,CIUT G Rotor System

Goal. The PUI has completed the modules with a basic understanding of the CH-53E rotor system.

Requirement

Modules:

Main Rotor System
In-flight Blade Inspection System
Tail Rotor System

Prerequisite. 0001

CBT-0012 3.0 * B,R,MR,CIUT G Flight Control System

Goal. The PUI has completed the flight control system modules with a basic understanding of the CH-53E flight control system.

Requirement

Modules:

Basic Helicopter Aerodynamics*
Mechanical Flight Controls
Hydraulic Flight Controls

Prerequisite. 0005

CBT-0013 2.0 * B,R,MR,CIUT G Automatic Flight Control System (AFCS)

Goal. The PUI has completed the modules with a basic understanding of the CH-53E AFCS.

Requirement

Modules:

AFCS Overview and Channel Philosophy

AFCS Servo Interface and Modes of Operations
Engagement Control
Malfunction Indications

Prerequisite. 0005,0012

CBT-0014 3.0 * B,R,MR,CIUT G Miscellaneous Systems

Goal. The PUI has completed the modules with a basic understanding of miscellaneous systems of the CH-53.

Requirement

Modules:

Exterior and Interior Lighting Systems
Cabin Heater System
Ice Detector System
Windshield Anti-Ice system
Ramp and Door System
Utility/Rescue Hoist System
Cargo Winch System
Single Point Hook System
Two Point Hook System

Prerequisite. 0001

CBT-0015 2.0 * B,R,MR,CIUT G Communication and Navigation Systems

Goal. The PUI has completed the modules with a basic understanding of communication and navigation systems of the CH-53.

Requirement

Modules:

Communication Systems
Navigation Displays and VGI
Navigation I: Compass System
Navigation II: Global Positioning System (GPS)
IFF, Radar Altimeter
Forward Looking Infrared (FLIR)

Prerequisite. 0001

CBT-0016 2.0 * B,R,MR,CIUT G Preflight Planning and Procedures

Goal. The PUI has completed the modules with a basic understanding of preflight planning and procedures.

Requirement

Modules:

Weight and Balance
Helicopter Preflight
Brief and Prestart I
Prestart II and Post-Flight
Pre-taxi Safety, EPs, & CRM

Prerequisite. 0001

CBT-0017 2.5 * B,R,MR,CIUT G Aircraft Survivability Equipment

Goal. The PUI has completed the modules with a basic understanding of aircraft survivability equipment of the CH-53.

Requirement

Modules:

ALE-47v2
APR-39
AAR-47v2
AAQ-24

Prerequisite. 0001

CBT-0018 3.0 * B,R,MR,CIUT G Introduction to the Flight Phase

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

Requirement

Modules:

Taxi, Takeoff, Hover, & Departure
Takeoff, Transition, Cruise, Approach, & Landing
Descent, Approach, Landing Takeoff, & Departure
Crosswind Takeoff & Landing
Post Flight
Rearward Flight, Autorotations, Engine Failures, Debriefing, Enroute
Takeoffs, Approach, Quick Stop, & Landings
AFCS, trim, Servo Malfunctions, Post flight, EPs & CRM
Single Point Performance Check
Integrated Maintenance Diagnostic System (IMDS)

Prerequisite. 0101-0111

CBT-0019 1.5 * B,R,MR,CIUT G Night Flight

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

Requirement

Modules:

Night Flying
Aircraft Lighting

Prerequisite. 0018

CBT-0020 2.5 * B,R,MR,CIUT G Instrument Flight and Navigation

Goal. The PUI has completed the modules with a basic understanding of instrument flight and navigation.

Requirement

Modules:

Basic Instrument Maneuvers
IFR Navigation I
IFR Navigation II
IFR Navigation III

Prerequisite. 0018

**CBT-0021 2.5 * B,R,MR,CIUT G VFR Navigation, GPS, and Helicopter
Night Vision Systems (HNVS)**

Goal. The PUI has completed the modules with a basic understanding of VFR navigation, GPS and HNVS.

Requirement

Modules:

Enroute Requirements, Procedures, & VFR Navigation I
GPS Introduction
GPS Operating Procedures
HNVS Introduction

HNVS Operating Procedures

Prerequisite. 0018

CBT-0022 1.0 * B,R,MR,CIUT G Formation Flight

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

Requirement

Modules:

Basic Formation I
Basic Formation II

Prerequisite. 0018

CBT-0023 1.0 * B,R,MR,CIUT G Confined Area Landings

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

Requirement.

Module:

Confined Area Landings

Prerequisite. 0018

CBT-0024 2.0 * B,R,MR,CIUT G External Cargo Operations

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

Requirement

Modules:

Single-Point External Lift Procedures, Day & Night
Two-Point Ext Lift Prelaunch, Preflight, Pre-takeoff, & Departure
Two-Point Ext Lift Enroute, Approach, Descent, & Load Release
Two-Point External Lift Safety, EPs, and CRM

Prerequisite. 0018

ACAD-0101 3.0 * B,R,MR,CIUT G The Auxiliary Power Plant

Goal. The PUI has an in-depth knowledge of the CH-53E Auxiliary Power Plant (APP) components and system.

Requirement.

Reading: Applicable excerpts from the CH-53E NATOPS and Systems Guide.

Discuss:

APP System Overview and Components
APP System Operation

Prerequisite: 0002

ACAD-0102 3.0 * B,R,MR,CIUT G Engines

Goal. The PUI has an in-depth knowledge of the CH-53E engine, and associated components and systems.

Requirement

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide

Discuss:

Basic architecture and major components
Start and Operation

Associated cautions and advisories
Indications and recognition of component failures
Impact of component failures
Correct response to component failures

Prerequisite. 0003

ACAD-0103 3.0 * B,R,MR,CIUT G Electrical System

Goal. The PUI has an in-depth knowledge of the CH-53E electrical system, aircrew interaction and related EPs.

Requirement.

Reading: Applicable excerpts from CH-53 NATOPS and Systems Guide.

Discuss:

Basic architecture and major components
Recognition of component failures
Impact of component failures
Correct response to any component failure

Prerequisite. 0004

ACAD-0104 3.0 * B,R,MR,CIUT G Hydraulic System

Goal. The PUI has an introductory knowledge of the CH-53E hydraulic, landing gear, and wheel brake systems, aircrew interaction, and related EPs.

Requirement

Reading: Applicable excerpts from the CH-53E NATOPS and Systems Guide

Discuss:

Basic architecture and major components
Normal operation of the hydraulic system
Normal operation of the landing gear system
Normal operation of the wheel brake system
Hydraulic system indicators
Associated caution and advisory lights
Correct response to any component failure

Prerequisite. 0005-0007

ACAD-0105 2.0 * B,R,MR,CIUT G Fuel System

Goal. The PUI has an introductory knowledge of the CH-53E fuel system architecture, major components, aircrew interaction, and fuel system EPs.

Requirement

Reading: Fuel system Student Guide chapter

Discuss:

Basic architecture and major components
Operation of the fuel system
Cautions and advisories associated with the system
Indications and impact of malfunctions
Response to malfunctions

Prerequisite. 0008

ACAD-0106 2.0 * B,R,MR,CIUT G Drive Train

Goal. The PUI has an in-depth knowledge of the CH-53E drive train.

Requirement.

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide.

Discuss:

- Basic architecture and major components of the drive train
- Drive system cautions and advisories
- Indications and recognition of drive train component failures
- Impact of drive train component failures
- Response to drive train component failures
- Basic architecture and major components of the rotor system
- Rotor system cautions and advisories
- Indications and recognition of rotor system component failures
- Impact of rotor system component failures
- Response to rotor system component failures

Prerequisite. 0009,0010

ACAD-0107 2.0 * B,R,MR,CIUT G Rotor System

Goal. The PUI has an in-depth knowledge of the CH-53E rotor system.

Requirement.

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide.

Discuss:

- Basic architecture and major components of the rotor system
- Rotor system cautions and advisories
- Indications and recognition of rotor system component failures
- Impact of rotor system component failures
- Response to rotor system component failures

Prerequisite. 0011

ACAD-0108 3.0 * B,R,MR,CIUT G Flight Control System

Goal. The PUI has an in-depth knowledge of the CH-53E flight control system, major components, aircrew interaction, and associated emergency procedures.

Requirement.

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide

Discuss:

- Flight control system basic architecture and major components
- Flight control system cautions and advisories
- Indications and recognition of flight control system component failures
- Impact of flight control system component failures
- Response to flight control system component failures

Prerequisite. 0012

ACAD-0109 2.0 * B,R,MR,CIUT G Automatic Flight Control System (AFCS)

Goal. The PUI has an in-depth knowledge of the architecture, major components and emergency procedures associated with the CH-53E AFCS.

Requirement.

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide

Discuss:

- Basic architecture and major components of the AFCS
- Operation of the AFCS
- Identify malfunctions associated with the AFCS

Identify the proper response to AFCS malfunctions

Prerequisite. 0013

ACAD-0110 2.5 * B,R,MR,CIUT G Communication and Nav Systems

Goal. The PUI has an in-depth knowledge of the architecture, major components and procedures associated with the CH-53 communication and navigation systems.

Requirement.

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide

Discuss

Basic architecture and major components
Operation of the systems
Identify malfunctions associated with the systems

Prerequisite. 0014,0015

ACAD-0111 2.5 * B,R,MR,CIUT G Crew Resource Management (CRM) Initial

Goal. The PUI understands CRM, the processes, and seven principles, and how they apply to the CH-53.

Requirement

Discuss:

Seven principles of Crew Resource Management
Initial Crew Resource Management in the CH-53 in accordance with CNAFINST 1542.7 series

ACAD-0112 2.0 * B,R,MR,CIUT G Introduction to Tactics

Goal. The purpose of this class is to provide the student with an unclassified, basic knowledge of operation and functionality of tactical systems employed on the CH-53E in order to set the foundational tactical understanding for training and operating in a fleet HMM.

Requirement.

Reading: Applicable excerpts from CH-53E ANTTP 3-22.3 and 3-22.4

Discuss:

Overview of surface-to-air threats faced by assault support aircraft
Requirement for Aircraft Survivability Equipment (ASE) on the CH-53
General theory and operation of CH-53E ASE
Basic operation and functionality of CH-53E ASE (AAR-47, DIRCM, APR-39, ALE-47)
Basic operation and functionality of CH-53 communication equipment (ARC-210, KY-58) while operating in a tactical environment

Prerequisite. 0017,0110

LAB-1000 2.0 * B,R,MR,CIUT G APP/Engines

Goal. The PUI has completed all Engine modules with an advanced understanding of the system and subsystem integration.

Requirement.

Modules:

Engine Assemblies Identification
Engine Lubrication System Operation
Engine Fuel Supply System Operation
Main Engine Start System Operation

Engine Components and Controls Overview

External Support. Maintenance Training Device or Static CH-53E

Prerequisite. 0101,0102

LAB-1001 1.0 * B,R,MR,CIUT G Fuel System

Goal. The PUI has completed all Fuel System modules with an advanced understanding of the CH-53E fuel system.

Requirement.

Modules:

Airframe Fuel System Identification and Operation
Fuel Indicating and Low Level Warning Systems Operation
Refuel / Defuel Sub-System Operation

External Support. Maintenance Training Device or Static CH-53E

Prerequisite. 0105

LAB-1002 2.0 * B,R,MR,CIUT G Drive Train and Rotor Systems

Goal. The PUI has completed the modules with an advanced understanding of the CH-53E rotor system.

Requirement.

Modules:

Transmission System Overview
Main Gearbox Assembly
Nose Gearbox Assembly
Intermediate Gearbox Assembly
Tail Gearbox Assembly
Drive Shafts
Main Rotor System Identification
Tail Rotor System Identification

External Support. Maintenance Training Device or Static CH-53E

Prerequisite. 0106,0107

LAB-1003 1.0 * B,R,MR,CIUT G Flight Control System

Goal. The PUI has completed the flight control system modules with an advanced understanding of the CH-53E flight control system.

Requirement.

Modules:

Flight Control Systems Component Identification and Operation

External Support. Maintenance Training Device or Static CH-53E

Prerequisite. 0108

LAB-1004 7.0 * B,R,MR,CIUT G Mission Planning

Goal. The PUI has a basic knowledge of the capabilities and operation of the Mission Planning Software.

Requirement.

Modules:

Creating a route
Creating waypoints

Mission Data Loader (MDL) operation

Prerequisite. 0111

LAB-1005	2.0	*	B,R,MR,CIUT	(N)	A	1	CH-53(STATIC)
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Goal. Introduce preflight inspection procedures.

Requirement

Discuss:

Component identification/nomenclature
Aircraft systems functionality

Introduce:

Before Interior Inspection
Exterior Inspection
Post Exterior Inspection
Interior Inspection

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

Instructor: FAM-1115 complete RAC

Prerequisite. 0111

External Syllabus Support. 1 Static CH-53

LAB-1006	2.0	*	B,R,MR,CIUT	(N)	A	1	CH-53(STATIC)
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Goal. Practice preflight inspection procedures.

Requirement

Discuss:

Component identification/nomenclature
Aircraft systems functionality

Practice:

Before Interior Inspection
Exterior Inspection
Post Exterior Inspection
Interior Inspection

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

Instructor: Crew Chief, (Crew Chief Instructor preferred)

Prerequisite. 1005

External Syllabus Support. 1 Static CH-53

LAB-1007	2.0	*	B,R,MR,CIUT	(N)	A	1	CH-53(STATIC)
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Goal. Review preflight inspection procedures. At the completion of LAB-1007, PUI shall be proficient in preflight procedures. At completion of LAB-1007, PUI shall turn in LAB-1007 ATF to the Safety Department.

Requirement

Demonstrate:

Maintenance Control procedures
Flight Equipment procedures
NATOPS preflight briefing

Discuss:

Preflight planning requirements (Weight and Power, Flight Schedule, ODO brief, Read and Initial)
Local SOPs
T&R Manual
Integrated Training System (ITS)

Introduce: Emergency Egress

Review:

Before Interior Inspection
Exterior Inspection
Post Exterior Inspection
Interior Inspection
Component Identification/Nomenclature
Aircraft Systems Functionality

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

Instructor: FRS IP

Prerequisites. LAB-1006

External Syllabus Support. 1 Static CH-53

2.7.2 Familiarization (FAM) (1100)

Purpose. To develop preliminary flight skills in the CH-53 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. FAM-1110 through FAM-1115 will normally be completed prior to flying higher stage events. Discuss and become thoroughly familiar with all aspects of CRM applicable to familiarization stage maneuvers as described in the appropriate CH-53 NATOPS Flight Manual(s) and Maneuver Description Guide(s).

FAM Overview

FAMILIARIZATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SFAM-1100	1.0	*	B,R,MR	D	S	1	INTRO COCKPIT PROC
SFAM-1101	1.0	*	B	D	S	1	INTRO TO A/C EMER
SFAM-1102	1.0	*	B	D	S	1	INTRO TO ENGINE MAL
SFAM-1103	1.0	*	B	D	S	1	INTRO TO RUNNING LANDNGS AND AUTOS
SFAM-1104	1.0	*	B	D	S	1	INTRO TO GEARBOX MAL
SFAM-1105	1.5	*	B,R,MR	D	S	1	INTRO TO CRM SKILLS
SFAM-1106	1.0	*	B,R,MR	D	S	1	PROGRESS CHECK
SFAM-1107	1.0	*	B	NS	S	1	NS ADAPTATION
FAM-1110	1.5	*	B	D	A	1	INTRO TO COCKPIT AND FLIGHT PROCEDURES
FAM-1111	1.5	*	B	D	A	1	INTRO TO PRECISION HOVER AND LOW WORK
FAM-1112	1.5	*	B	D	A	1	INTRO TO ENG FAILURES AND RUNNING LANDINGS
FAM-1113	1.5	*	B	D	A	1	INTRO TO NO HOVER LANDINGS
FAM-1114	1.5	*	B,R,MR	D	A	1	INTRO TO PARTIAL/TOTAL AFCS FAILURE
FAM-1115	1.5	*	B	D	A	1	INTRO TO HIGH AOB MANEUVERS & AUTOS
FAM-1116	1.5	*	B,R,MR	D	A	1	PRACTICE FAM MANEUVERS AND EPS
FAM-1117	1.5	*	B	D	A	1	PRACTICE FAM MANEUVERS AND EPS
FAM-1118	1.5	*	B,R,MR	D	A	1	REVIEW FAM MANEUVERS AND EPS
FAM-1119	1.5	*	B	D	A	1	PROGRESS CHECK

FAMILIARIZATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
FAM-1201	1.5	*	B	NS	A	1	INTRO TO NS LOW AND PATTERN WORK
FAM-1202	1.5	*	B	NS	A	1	PRACTICE NS LOW AND PATTERN WORK

SFAM-1100 1.0 * B,R,MR D S WST/APT

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

Requirement

Introduce:

- Pre-start checklist
- APP start checklist
- Post APP start checklist
- Engine Start / Rotor Engagement checklist
- Pre-taxi/ Hot Seat checklist
- Cockpit ramp and door procedures
- Operation of engine trim switches
- Fuel transfer procedures
- Operation of the ICS and radios
- Shutdown checklist

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

Prerequisites. CBT-0017

External Syllabus Support. WST/APT.

SFAM-1101 1.0 * B D S WST/APT

Goal. Introduce normal ground and flight procedures including aircraft emergencies. Practice Start/Shutdown Checklist. Discuss face-to-face Aircrew Brief at aircraft about the flight.

Requirement

Introduce:

- External fuel tank jettison
- Engine start emergencies
 - Cold / Hung Start, Hot Start, Hydraulic Start Motor does not disengage, and Slipping
 - Rotor Brake
- Ground Taxi
- Taxi Checklist
- Takeoff Checklist
- Fuel Transfer Checklist
- Landing Checklist
- Hovering
 - Turns on the spot and slides
 - Vertical takeoff to a hover
- Transition to forward flight
- Normal approaches to a hover and normal vertical landing
- Engine compartment fire on the ground
- Single and/or dual engine compartment fires in-flight
- APP or cabin heater fire
- External Fuel Tank Jettison
- Fuel dump

Practice: Start/shutdown procedures

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

Prerequisites. CBT-0018, FAM-1100

External Syllabus Support. WST/APT

SFAM-1102	1.0	*	B	D	S	WST/APT
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Goal. Introduce engine malfunctions. Practice cockpit and flight procedures, Start/Shutdown Checklists, and some previously introduced emergencies.

Requirement

Introduce:

- CH-53 PCL NATOPS brief/CH-53 NATOPS debrief
- Engine restart during flight
- Crosswind landing
- Single engine failure (hover and takeoff)
- Effects of gross weight on single and/or dual engine performance
- Single and/or dual engine failure at altitude
- Engine shutdown in-flight
- Compressor stall
- Engine power loss
- Engine post-shutdown fire
- Simulated MGW Takeoff from a hover

Crosswind landing form a hoverPractice:

- Cockpit and flight procedures
- Start/shutdown checklist
- Previously introduced emergencies

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

Prerequisites. FAM-1101

External Syllabus Support. WST/APT

SFAM-1103	1.0	*	B	D	S	WST/APT
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Goal. Introduce Running Takeoff/Landings, Autorotative Descents, and Simulator Full Autorotation Procedures. Practice previously introduced flight procedures and normal cockpit procedures.

Requirement

Introduce:

- Running takeoff/landing
- MGW running takeoff
- Wave-off
- Single and/or dual engine wave-off/landing
- Practice autorotative flight
- Three engine failure
- High angle of bank maneuvering and the effects of variables (angle of bank, power required, descent rate, gross weight, temperature, density altitude, etc.) on the performance of the aircraft
- Dual engine failure at altitude
- Engine overspeed
- Single and/or dual engine failure (hover/takeoff)
- Nf flex shaft failure
- Full Autorotation

Practice:

- Aircraft emergencies
- Previously introduced flight procedures
- Normal cockpit procedures

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

Prerequisites. FAM-1102

External Syllabus Support. WST/APT

SFAM-1104 1.0 * B D S WST/APT

Goal. Introduce gearbox malfunctions. Introduce basic CRM concept. Practice previously introduced emergency and flight procedures.

Requirement

Introduce:

- Engine chip detector light
- Control linkage failure
- Power deterioration
- Engine oil pressure high caution light, high oil temperature, engine oil quantity low
- Nose gearbox chip detector light/failure
- Accessory gearbox oil system failure
- Accessory gearbox chip detector light/failure
- Main gearbox oil system failures
- Main gearbox chip locator light/failure
- Power train failures
- Tail rotor drive system failure, tail rotor gearbox or intermediate gearbox failure, and tail rotor or intermediate gearbox chip detector light

Practice:

- Previously introduced emergencies
- Flight procedures

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

Prerequisites. FAM-1103

External Syllabus Support. WST/APT

SFAM-1105 1.5 * B,R,MR D S WST/APT

Goal. Introduce communication skills IAW CRM techniques. Practice all ground, flight, and aircraft emergency procedures.

Requirement

Introduce:

- Obstacle takeoff and approach
- Smoke and fume elimination
- AFCS computer malfunctions/mode failures , total AFCS failure
- BIM/Blade Pressure caution light (in-flight)
- Approach and landing with tail rotor control system failure
- Tail rotor tandem servo malfunction
- Fuel filter bypass light
- Hydraulic fire in main rotor pylon
- Use of GPS system
- Sender/receiver responsibilities and overcoming communication barriers

Discuss: ICS switchology and techniques, visual and standard terminology

Practice: Ground, flight, and aircraft emergency procedures

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

Prerequisites. FAM-1104

External Syllabus Support. WST/APT

SFAM-1106	1.0	*	B,R,MR	D	S	WST/APT
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Goal. Conduct Progress Check. Introduce communication skills IAW CRM techniques.

Requirement

Introduce:

- Ground resonance procedure
- Vortex Ring State
- Pr>Pa
- Dynamic rollover
- Electrical fire
- Alternating/Direct current system failures
- Rotor damper failure
- Lightning strike
- Most conservative response rule, the two-challenge rule, and task saturation with compound emergencies

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

Prerequisites. FAM-1105

External Syllabus Support. WST/APT

SFAM-1107	1.0	*	B	NS	S	WST/APT
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Goal. Introduce NS adaptation.

Requirement

Introduce:

- NS set-up/operation
- Cockpit lighting
- Blind cockpit drills
- NS malfunctions
- NS goggle/degoggle procedures
- NS scan techniques
- Basic FAM pattern and approaches utilizing NS
- Emergencies while wearing NS
- NS failure

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

Prerequisites. The Night Imaging and Threat Evaluation (NITE) Lab syllabus, CBT-0019, FAM-1106

External Syllabus Support. WST/APT

FAM-1110	1.5	*	B	D	A	1	CH-53E
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Goal. Introduce start, normal ground, and flight procedures including low work and normal approaches.

Requirement

Discuss:

- ARC 210 Operation
- Fuel management
- Fuel dump system/procedures and auxiliary fuel tank jettison system/parameters
- Fuel supply system, fuel transfer system, fuel purge system, and pressure refueling system

Introduce:

Normal cockpit procedures
Starting procedures
Radio procedures
Taxiing
Vertical takeoffs and landings
Transition to forward flight
Operation of engine trim switches
Normal approaches to a hover
Ramp operation
Shutdown procedures
Conduct an area familiarization and local course rules flight

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

Prerequisites. LAB-1002, FAM-1106

FAM-1111	1.5	*	B	D	A	1	CH-53E
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Goal. Introduce precision hover/low work. Practice start, normal ground, and previously introduced flight procedures.

Requirement

Discuss:

Engine restart in-flight
Blade and pylon fold
Utility hoist procedures
Effects of Pilot Induced Oscillations (PIO)
Exhaust gas re-ingestion
Effects of high AOB maneuvering and subsequent aircraft response
No 2 engine dual thermal detection system
No 2 engine over-heat caution light in flight
Engine start/ignition system
Hot start, hung start
AOB limitations
Emergency shutdown procedures

Demonstrate:

High AOB maneuvers
Introduce:
Square patterns/turns on the spot
Precision (stable) hover
Air taxi
Single engine and/or dual engine flight characteristics at altitude

Practice:

Start procedures
Normal ground procedures
Previously introduced flight procedures

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

Prerequisites. FAM-1110

FAM-1112	1.5	*	B	D	A	1	CH-53E
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Goal. Introduce engine failure(s) at altitude, running takeoffs and landings, precision approaches.

Requirement

Discuss:

- Engine system/limitations
- Engine overspeed/Nf flex shaft failure
- Compressor stall
- Engine power loss
- Engine high/low oil pressure
- Engine high oil temperature
- Engine chip detector light
- Control linkage failure
- Effects of gross weight on single and/or dual engine performance
- Engine shutdown in flight/fuel siphoning
- Engine restart in flight

Introduce:

- Simulated single and/or dual engine failure at altitude
- Running takeoffs and landings
- Precision approaches to a hover

Practice:

- Cockpit procedures
- Hover/low work
- Previously introduced FAM maneuvers

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

Prerequisites. FAM-1111

FAM-1113	1.5	*	B	D	A	1	CH-53E
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Goal. Introduce no hover landings. Practice previously introduced FAM maneuvers and simulated emergency procedures.

Requirement

Discuss:

- Single/dual engine wave-off
- Single/dual engine landing
- Fire detection/extinguishing system
- Engine compartment fire on the ground
- Engine compartment fires in flight
- APP or cabin heater fire
- Fuselage fire
- Hydraulic fire in main rotor pylon
- Engine post shutdown fire
- Electrical fire
- Smoke and fume elimination
- Fire during ground refueling

Introduce:

- No hover landings
- Single and/or dual engine wave-offs
- Simulated single and/or dual engine failure during takeoff
- Simulated single and/or dual engine landings (running and to a spot)
- Simulated max gross weight takeoff (hover/running)

Practice:

- Previously introduced FAM maneuvers

Simulated emergency procedures

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

Prerequisites. FAM-1112

FAM-1114 1.5 * B,R,MR D A 1 CH-53E

Goal. Introduce simulated partial/total AFCS failure. Practice FAM and previously introduced simulated emergency procedures.

Requirement

Discuss:

AFCS system/functions
Inner/outer loop
AFCS servo functions
AFCS servo hardover
Longitudinal bias actuator
FAS functions
Trim functions
Desensitizer failure
AFCS computer malfunctions/mode failures
Total AFCS failure
Ground resonance

Introduce:

Obstacle takeoff, approach
Partial/total AFCS failure
Practice autorotative flight (Refreshers and Modified Refreshers only)

Practice:

Previously introduced FAM maneuvers
Simulated emergency procedures

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

Prerequisites. FAM-1113

FAM-1115 1.5 * B D A 1 CH-53E

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

Requirement

Discuss:

BIM/IBIS blade systems
BIM/Blade pressure caution light in flight
Flight control system
Control couplings
Damper system/failure
Primary tandem servos operation/malfunction
Approach and landing with a tail rotor control system malfunction.

Introduce:

High AOB maneuvers
Practice autorotative flight

Practice:

All FAM maneuvers
Simulated emergency procedures

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

Prerequisites. FAM-1114

FAM-1116	1.5	*	B,R,MR	D	A	1	CH-53E
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Goal. Practice all FAM maneuvers, and simulated emergency procedures.

Requirement

Discuss:

- Transmission system/limitations
- Chip detection system
- Nose gearbox chip location light
- Nose gearbox failure
- Accessory gearbox oil system failure
- Accessory gearbox chip locator light
- Accessory gearbox failure
- Main gearbox chip locator light
- Main gearbox oil system failure
- Loss of main gearbox lubrication
- Power train failure
- Tail rotor or intermediate gearbox chip detector light
- Tail rotor gearbox or intermediate gearbox failure
- Tail rotor drive system failure
- Pylon unsafe for flight light

Practice:

All FAM maneuvers
Simulated emergency procedures

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

Prerequisites. FAM-1115

FAM-1117	1.5	*	B	D	A	1	CH-53E
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Goal. Practice all FAM maneuvers and simulated emergency procedures.

Requirement

Discuss:

- Rotor brake system
- APP
- Hydraulic power supply systems
- Hydraulic power supply system failures
- Utility hydraulic subsystems

Practice:

All FAM maneuvers
Simulated emergency procedures

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

Prerequisites. FAM-1116

FAM-1118	1.5	*	B,R,MR	D	A	1	CH-53E
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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 V_{MAX})
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
Conditions leading to Vortex Ring State and $Pr > Pa$
Landing gear system
Landing gear system failure
Bearing Monitor System
Bearing VIB or TEMP DETECT and LIMIT
BMS fault isolation

Practice:

All FAM maneuvers
Simulated emergency procedures

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

Prerequisites. FAM-1117

FAM-1119	1.5	*	B	D	A	1	CH-53E
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Goal. Conduct Progress Check.

Requirement

Practice:

All FAM maneuvers
Simulated emergency procedures

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

Prerequisites. FAM-1118, CH-53E NATOPS open book exam.

2.7.3 Night Familiarization (NFAM)

Purpose. To develop preliminary flight skills in the CH-53 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 Introduction Night Systems (NS) phase flights under High Light Level (HLL) ambient conditions with an NS FAM Instructor (NSFI) or NS Instructor (NSI).

FAM-1201	1.5	*	B	NS	A	1	CH-53E
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Goal. Introduce NS low work and pattern work.

Requirement

Discuss:

Aircraft lighting systems
Electrical failures
Electrical power supply system

- Single and multiple generator failure
- Single and dual rectifier failure
- 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
- Differences in AN/AVS-9 NVGs
- Strengths and weaknesses of WP-B-01 NVGs

Introduce:

- Tip path plane awareness
- HNVS operation
- Use of NS while performing taxi, basic low work, hover, and vertical takeoffs/landings at an unlit field or packed surface

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

Prerequisites. FAM-1600, the Night Imaging and Threat Evaluation (NITE) Lab syllabus, and based on simulator availability, FAM-1107

FAM-1202	1.5	*	B	NS	A	1	CH-53E
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Goal. Practice low work, takeoffs/landings and pattern work while using NS.

Requirement

Discuss:

- Solar Lunar Almanac Program (SLAP)
- Light Interference Filters (LIFS)
- Effects of shadowing on NS operations
- Effects of atmospheric conditions on NS performance
- Blooming/de-gaining
- Approach pattern
- External aircraft lighting
- Spectrum viewed by NS (FLIR/NS)

Practice:

- HNVS operation
- Use of NS while performing taxi, basic low work, hover, and vertical takeoffs/landings at an unlit field or packed surface

Performance Standards. Per CH-53 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. Pilots may use the simulator for any instrument flight requirement; however, they may use it for no more than 50 percent of the total instrument syllabus requirements. The simulator will not satisfy the CNAF night minimums requirement.

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

SINST-1300 1.0 * B D S WST/APT

Requirement

Prerequisites. CBT-0020

External Syllabus Support. WST/APT

SINST-1301	1.0	*	B,R	D	S	WST/APT
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Goal. Introduce partial panel flight, VOR/ADF procedures and adaptability/flexibility per CRM techniques.

Requirement

Partial panel flight
VOR/ADF approach
Holding
Adaptability/flexibility in the CH-53E per CRM techniques

Discuss:

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

Practice: TACAN procedures

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

Prerequisites. INST-1300

External Syllabus Support. WST/APT

SINST-1302	1.0	*	B,R	D	S	WST/APT
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Goal. Introduce ILS/localizer approaches and mission analysis per CRM techniques. Practice aircraft emergency procedures.

Requirement

Introduce:

ILS and localizer approaches
Mission analysis in the CH-53 per CRM techniques

Discuss: The three stages of mission analysis, and standardized procedures

Practice:

TACAN and VOR approaches
Previously introduced emergency procedures

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

Prerequisites. INST-1301

External Syllabus Support. WST/APT

SINST-1303	1.0	*	B	D	S	WST/APT
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Goal. Introduce unusual attitudes and recovery procedures, PAR, ASR approaches and situational awareness considerations in the CH-53 per CRM techniques. Practice aircraft emergency procedures.

Requirement

Introduce:

Unusual attitudes and recovery procedures
PAR and ASR approaches
Situational awareness considerations in the CH-53 per CRM techniques
Task fixation during an instrument approach with an emergency or degraded system

Practice: Aircraft emergency procedures

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

Prerequisites. INST-1302

External Syllabus Support. WST/APT

SINST-1304	1.0	*	B	D	S	WST/APT
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Goal. Introduce radio failure, ATC procedures in IMC conditions and leadership principles per CRM techniques.

Requirement

Introduce:

IFR departure
COMM/NAV failure under IMC
Single and/or dual engine missed approach
IFR canned route (Flight planning)
Leadership principles in the CH-53E per CRM techniques
Command authority, crewmember relationships in the cockpit and cabin, and division of tasks

Performance Standards.

Per CH-53E NATOPS, Instrument NATOPS, FLIP publications and Maneuver Description Guide.

Prerequisites. INST-1303

External Syllabus Support. WST/APT

INST-1305 2.0 * B,R (N) A 1 CH-53E

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

Requirement

Discuss:

Approach minimums and helicopter-only approaches
BDHI/course indicator switches
ILS/LOC and LOC back course approaches
Instrument checklist
Inadvertent entry into IMC conditions
Lost plane procedures
Lighting strike
Emergency descent
Use/Failure of AFCS functions in IMC conditions

Introduce:

Time-distance checks
ADF procedures
Operation of the transponder modes
VOR procedures
TACAN procedures
Point-to-point navigation
ILS/LOC procedures
PAR procedures

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

Prerequisites. INST-1304

INST-1306 1.5 * B,R,MR (N) A 1 CH-53E

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

Requirement. Plan, file, brief, and fly an IFR flight away from home field.

Discuss: Range performance charts in the CH-53 NATOPS Manual.

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

Prerequisites. INST-1305.

2.7.5 Navigation (NAV)

Purpose. To navigate without radio navigational aids and identify positions by using charts and maps. Day and NVG navigation training in the aircraft is introduced during the formation (FORM) stage of training

Crew Requirement. N/A

NAV Overview.

NAVIGATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SNAV-1400	1.0	*	B	D	S	1	INTRO TO FLIGHT PLANNING SOFTWARE

SNAV-1400 1.0 * B D S APT/WST

Goal. Introduce use of flight planning software and GPS procedures.

Requirement. Utilize flight planning software to develop a route card and load the GPS Mission Data Loader with a minimum of six waypoints. Waypoints/route should be annotated on a 1:50,000 chart.

Discuss: GPS set-up, programming, operation, and use

Introduce:

Deleting FPLN
Loading FPLN
DIR function
MARK function

Practice:

Executing CDNU features with focus on GPS function and Line Select keys
Reading a LAT/LONG off Sectional/JOGAIR Chart

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

Prerequisites. CBT-0021

External Syllabus Support. WST/APT

2.7.6 Formation (FORM)

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

Crew Requirement. 1501: IP/RAC/CC. 1502: IP/RAC/CC/AO.

FORM Overview.

FORMATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SFORM-1500	1.0	*	B,R,MR	D	S	1	INTRO TO DAY FORM
FORM-1501	2.0	*	B	D	A	2	INTRO TO PARADE CRUISE AND SEC LANDINGS
FORM-1502	2.0	*	B	NS	A	2	INTRO TO NS FORM

SFORM-1500 1.0 * B,R,MR D S WST/APT

Goal. Introduce day formation principles.

Requirement. As Wingman, fly the simulated section flight scenario

Discuss: Closure rate, over-runs, CRM, and comfort level

Introduce:

Turn Pattern-using cruise flight Principles (AOB)
Break-up and Rendezvous (to the left and right)
Crossovers
Section takeoffs / landings
Over-run

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

Prerequisites. CBT-0022

External Syllabus Support. WST/APT

FORM-1501 2.0 * B D A 2 CH-53E

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

Requirement: As lead, use 1:250,000 and 1:50,000 maps to navigate to a minimum of six terrain features using approved flight planning software. Pilots should conduct this flight between 200 and 500 feet AGL.

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
- Use of flight planning software
- GPS operation/use

Introduce:

Section takeoffs, parade position, crossovers, breakups, rendezvous, lead changes, landings, cruise formations, and IMC break-up

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

Prerequisite. NAV-1400, FORM-1500, CAL-1601 if conducted to a CAL site

Range Requirements. Approved CAL/MAL site, if conducted to a CAL site

FORM-1502 2.0 * B NS A 2 CH-53E

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

Requirement: As lead, use 1:250,000 and 1:50,000 maps to navigate to a minimum of six terrain features using approved flight planning software. Pilots should conduct this flight between 200 and 500 feet AGL.

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

Introduce:

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

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

Prerequisite. FAM-1202, FORM-1501, CAL-1602 and CAL-1603.

Range Requirements. Approved CAL/MAL site.

2.7.7 Confined Area Landings (CAL) (1600)

Purpose. Develop takeoff and landing skills in confined areas.

Crew Requirement. 1601/1602: IP/RAC/CC. 1603/1604: IP/RAC/CC/AO.

CAL Overview.

CONFINED AREA LANDING STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SCAL-1600	1.0	*	B	NS	S	1	INTRO TO NS CALS
CAL-1601	1.5	*	B	D	A	1	DAY CALS
CAL-1602	1.5	*	B,R,MR	D	A	2	INTRO TO SEC CALS
CAL-1603	1.5	*	B,R,MR	NS	A	1	INTRO TO NS CALS
CAL-1604	1.5	*	B	NS	A	2	INTRO TO NS SEC CALS

SCAL-1600 1.0 * B NS S WST/APT

Goal. Introduce night systems CAL approaches.

Requirement

Discuss:

Instrument scan requirements
Crew coordination

Introduce:

FLIR system, operation and utilization
NS HUD operation and utilization

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

Prerequisite. CBT-0019, FAM-1107.

External Syllabus Support. WST/APT.

CAL-1601 1.5 * B D A 1 CH-53E

Goal. Practice 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
Vortex Ring State
 $P_R > P_A$
Main and tail rotor clearance factors over sloping or uneven terrain
LZ considerations
MFCD Hover Display

Practice: Precision approaches to confined areas.

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

Prerequisite. FAM-1111

Range Requirements. Approved CAL/MAL site.

CAL-1602 1.5 * B,R,MR D A 2 CH-53E

Goal. Introduce section CAL approaches and landings.

Requirement

Discuss:

Hazards associated with section CAL landings
CRM
Section Waveoffs

Introduce:

Day Section CAL approaches and landings

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

Prerequisite. FORM-1501 and CAL-1601. CAL-1602 may be flown in conjunction with FORM-1501

Range Requirements. Approved CAL/MAL site

CAL-1603 1.5 * B,R,MR NS A 1 CH-53E

Goal. Introduce NS confined area landings.

Requirement

Discuss:

Precision obstacle approaches
CRM/comfort level
Aircraft lighting

Practice: Night CAL approaches and takeoffs with NS

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

Prerequisite. FAM-1202,CAL-1601 and based off of simulator availability SCAL-1600

Range Requirements. Approved CAL/MAL site

CAL-1604 1.5 * B NS A 2 CH-53E

Goal. Introduce NS section confined area landings.

Requirement

Discuss:

Hazards associated with NS section CAL landings
CRM
Section Waveoffs

Introduce: NVG Section CAL approaches and landings.

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

Prerequisite. FORM-1502, CAL-1602, and CAL-1603.

Range Requirements. Approved CAL/MAL site.

2.7.8 External Loads (EXT)

Purpose. To develop skills necessary for external cargo operations.

General. Prior to EXT-1700, refer to operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTTP series, MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual. Discuss and

become familiar with all aspects of CRM applicable to external operations as described in the appropriate CH-53 NATOPS Flight Manual.

Crew Requirement. IP/RAC/CC/AO.

External Syllabus Support. Helicopter Support Team (HST), single and dual point external load(s) as required.

EXT Overview.

EXTERNAL LOADS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SEXT-1700	2.0	*	B,R,MR	D	S	1	INTRO SINGLE AND DUAL POINT EXTERNALS
EXT-1701	1.5	*	B,R,MR	D	A	1	INTRO TO SINGLE POINT
EXT-1702	1.5	*	B,R	NS	A	1	INTRO TO NS SINGLE POINT
EXT-1703	1.5	*	B,R,MR	D	A	1	INTRO TO DUAL POINT
EXT-1704	1.5	*	B,R	NS	A	1	INTRO TO NS DUAL POINT

SEXT-1700 2.0 * B,R,MR S WST/APT

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

Requirement

Introduce:

- Single and dual point hook checks
- Operational Power Checks
- Single Point Performance checks
- Weight and Power calculations in the zone
- Cargo pickup and release procedures
- CRM consideration for external operations
- Voice signals/standardized terminology
- Emergency Procedures during external operations
- MFC D Hover Display

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

Prerequisite. CBT-0024

External Syllabus Support. WST/APT with Aircrew External Trainer if available

EXT-1701 1.5 * B,R,MR D A 1 CH-53E

Goal. Introduce single point external cargo operations.

Requirement

Discuss:

- Precision hover
- Flight envelopes with external loads
- Weight and balance calculations
- Nr requirements
- Vortex Ring State/ $P_R > P_A$
- Operational power checks
- Single point performance checks
- Single point suspension system/operations
- Cargo pickup and delivery procedures
- Power available/required considerations
- Cargo release modes
- Cargo jettison procedures
- Hook open advisory light in flight

DSEN failure
MFCD Hover Display

Introduce:

Cargo pickup and release procedures
CRM
Voice signals/standardized terminology

Performance Standards. Perform five hookups and releases, or until proficiency is demonstrated per CH-53 NATOPS, MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual, and Maneuver Description Guide.

Prerequisite. CAL-1601 and EXT-1700

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and single point load

EXT-1702	1.5	*	B, R	NS	A	1	CH-53
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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: External cargo pickup and delivery utilizing NS

Performance Standards. Perform five hookups and releases, or until proficiency is demonstrated per CH-53 NATOPS, MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual, and Maneuver Description Guide.

Prerequisite. CAL-1603 and EXT-1701

Range Requirements. CAL/MAL site

External Syllabus Support. HST single point load

EXT-1703	1.5	*	B,R,MR	D	A	1	CH-53E
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Goal. Introduce dual point procedures.

Requirement

Discuss:

Dual point suspension system
Dual point suspension system operations/limitations
CRM
Emergencies encountered during external operations
Forward/Aft hook open advisory light in flight
Pilot induced/assisted oscillations
Cargo jettison

Introduce: External cargo pickup and release procedures utilizing the dual point external system

Performance Standards. Perform 5 hookups and releases, or until proficiency is demonstrated per CH-53E NATOPS, MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual, and Maneuver Description Guide.

Prerequisite. EXT-1701

Range Requirements. CAL/MAL site

External Syllabus Support. HST and dual point load

EXT-1704 1.5 * B,R NS A 1 CH-53E

Goal. Introduce dual point procedures at night utilizing NS.

Requirement

Discuss:

NS considerations
CRM
Comfort level
Scan techniques
Aircraft emergencies
Cargo jettison procedures
Aircraft lighting
Landing zone markings

Introduce: External cargo pickup and release NS procedures

Performance Standards. Perform 5 hookups and releases or until proficiency is demonstrated per CH-53E NATOPS, MCRP4-23E and Multi-Service Helicopter Sling Load Manual, and Maneuver Description Guide.

Prerequisite. EXT-1702 and EXT-1703

Range Requirements. CAL/MAL site

External Syllabus Support. HST and dual point load

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 ACAD-2011 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.

Crew Requirement. IP/RAC/CC/AO.

TERF Overview.

TERRAIN FLIGHT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
STERF-1800	1.0	*	B,R	D	S	1	INTRO TO TERF MANEUVERS
TERF-1801	1.5	*	B,R	D	A	1	INTRO TO TERF NAVIGATION

STERF-1800 1.0 * B,R S WST/APT

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:

Operational power checks
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-53 NATOPS, ANTTP 3-22.3-CH53, and Maneuver Description Guide.

Prerequisites. CBT-0018

Range Requirements. TERF maneuver area/route and CAL/MAL site

TERF-1801	1.5	*	B,R	D	A	1	CH-53E
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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:

Operational power checks
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-53 NATOPS, ANTTP 3-22.3-CH53, ANTTP 3-22.5 Tactical Pocket Guide and Standardization Manual.

Range Requirements. TERF maneuver area/route and CAL/MAL site

Prerequisite. CAL-1601 and TERF-1800

2.7.10 Tactical Employment (TAC)

Purpose. Introduce assault support tactical missions and mission systems in a low threat environment.

Crew Requirement. IP/RAC.

TACTICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
STAC-1802	2.0	*	B	D	S	1	LOW THREAT TAC INTRO

STAC-1802 2.0 * B D S 1 APT/WST

Goal. Introduce assault support tactical missions and mission systems in a low threat environment.

Requirement

Introduce:

ASE overview and operation (AAR-47, DIRCM, APR-39, ALE-47)
Emissions control (EMCON), Transmission Security (TRANSEC), and Communication Security (COMSEC)
CDNU operation of radios, transponder, and navigation
MFCD operation of Hover Page and Map Page
Airspace Control Measures (ACM)
Objective area planning
Objective area mechanics
Mandatory objective area communications
Objective area contingencies
Mission Smartpack

Performance Standards. Demonstrate basic understanding of ASE, mission systems, and objective area mechanics.

Prerequisite. ACAD-0112 and TERF-1801

2.7.11 Review (REV)

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

Crew Requirement. IP/RAC/CC.

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

REV Overview.

REVIEW STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SREV-1900	1.5	*	B,R	D	S	1	REVIEW CIP TRAINING

SREV-1900 1.5 * B,R D S WST/APT

Goal. Review Core 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-53E NATOPS and Maneuver Description Guide. RAC is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. FAM-1119

Range Requirements. CAL/MAL site

2.7.12 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).

H2P Overview.

CORE INTRODUCTION CHECK STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
H2P-1902	2.0	*	B,R,MR	D	A	1	H2P CHECK

H2P-1902 2.0 * B,R,MR D A 1 CH-53E

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

Requirements

Evaluate:

Systems and mission systems knowledge of the CH-53
Brief and demonstrate proficiency of all aircraft emergency procedures per the CH-53 NATOPS Flight Manual
Demonstrate proficiency and capability to perform Core Introduction maneuvers, to include takeoffs, approaches, instrument procedures, emergency procedures, CALs, high AOB maneuvers, and landings

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

Prerequisite. Open and Closed book NATOPS exams and aircraft systems exam.

Range Requirements. CAL/MAL site

2.8 CORE PHASE (2000)

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, 2105
FORM-2110
CAL-2210, 2211
EXT-2400, 2410, 2411, 2441
TAC-2910, 2911

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

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

CORE PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
FAMILIARIZATION (FAM)/FORMATION (FORM)/INSTRUMENT (INST)	2.8.1	2-48
CONFINED AREA LANDINGS (CAL)	2.8.2	2-51
TERRAIN FLIGHT (TERF)	2.8.3	2-53
EXTERNALS (EXT)	2.8.4	2-55
GROUND THREAT REACTION (GTR)	2.8.5	2-59
HELICOPTER AIR TO AIR REFUELING (HAAR)	2.8.6	2-61
AERIAL GUNNERY (AG)	2.8.7	2-64
TACTICS (TAC)	2.8.8	2-65
HIGH LIGHT LEVEL (HLL)	2.8.9	2-67
LOW LIGHT LEVEL (LLL)	2.8.10	2-72

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.

2000-6000 classes are located at the MAWTS-1 NIPR website:

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

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under courseware:

<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

2.8.1 Familiarization/Formation/Instruments (FAM/FORM/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 ANTPP 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-2100: P/P. DAY MFCD/HUD/FAM/CAL: P/P. FAM/INST-2105: P/P/CC FORM 2110: P/P/CC/AO.

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: N/A
Flight: H2P-1902
Designation/Qualification: H2P

FAM/FORM/INST Overview.

FAMILIARIZATION/ FORMTATION/ INSTRUMENT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2000	1.0	*	B		G		CH-53 GPS (FAM)
ACAD-2001	1.0	365	B,R,M		G		ARC-210 SINGARS AND HAVEQUICK
ACAD-2003	1.0	*	B		G		CH-53 INTERNAL CARGO OPS
ACAD-2004	1.5	365	B,R,M		G		CH-53 AAR/ALE-47
ACAD-2005	1.0	*	B		G		CH-53 TACFORM
SFAM-2100	1.5	90	B,R,M	(N)	S/A	1	SIM/ FAM/ INST/ EP
SFAM-2101	1.5	*	B,R	D	S/A	1	DAY HUD FAM/ CAL
FAM-2105	1.5	365	B,R,M	(N)	A	1	FAM/ INST/ EP
FORM-2110	1.5	365	B,R,M	D	A	2	DAY FORM

SFAM-2100 1.5 90 B,R,M (N) S/A 1 WST/APT/CH-53E

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.

Requirements

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

Review:

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

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

External Syllabus Support. WST/APT

Prerequisites. H2P-1902

SFAM-2101 1.5 * B,R D S/A 1 WST/APT/CH-53E

Goal. Introduce and develop proficiency MFCD moving map and hover display and ANVIS-24 day (HUD).

Requirement

Discuss:

Same as FAM/INST-2100
CRM utilizing ANVIS-24 day (HUD)
ANVIS-24 Heads-Up Display Operation
CRM utilizing MFCD Moving Map layer
CRM utilizing MFCD Hover Display layer
MFCD FLIR Layer
Limitations
Switchology

Functionality/Image
HNVS

Introduce:

Same as FAM/INST-2100
MFCD
Low work with MFCD Hover Display
Pattern work with MFCD Hover Display and Moving Map
ANVIS-24 (HUD)
Low Work with HUD
Pattern work with HUD

Review:

Same as FAM/INST-2100
Low work
Pattern work CAL/MAL
CAL-2101 and HLL-2220

Performance Standards. Same as FAM/INST-2100.

Instructor. BIP required for initial flights or refreshers

Prerequisite. Same as FAM/INST-2100

Range Requirements. CAL/MAL site

FAM-2105	1.5	365	B,R,M	(N)	A	1	CH-53E
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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. FAM-2100

FORM-2110	1.5	365	B,R,M	D	A	2	CH-53E
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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

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

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 ANTPP 3-22.3-CH53.

Successfully execute inadvertent IMC breakup and rendezvous IAW ASTACSOP.

Prerequisite. ACAD-2005, FAM-2105

2.8.2 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-53 NATOPS, Maneuver Description Guide and ANTPP 3-22.3-CH53.

Crew Requirement. CAL-2210: P/P/CC, 2211: P/P/CC/AO. 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: N/A

Flight: FAM-2105

Designation/Qualification: H2P

CAL/MAL Overview

CONFINED AREA LANDINGS/ MOUNTAIN AREA LANDINGS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2007	1.0	365	B,R,M		G		DESERT AREA OPERATIONS
ACAD-2008	1.0	365	B,R,M		G		MOUNTAIN OPERATIONS
ACAD-2009	1.0	*	B		G		COMBAT AIRCREW COORDINATION
ACAD-2010	1.0	*	B		G		AN/AVS-7 CH-53 ANVIS HUD
SMAL-2200	1.0	*	B	D	S/A	1	MOUNTAIN AREA LANDINGS
CAL-2210	1.5	*	B	D	A	1	CALS
CAL-2211	1.5	365	B,R,M	D	A	2	SECTION CALS

SMAL-2200	1.0	*	B	D	S/A	1	WST/APT/CH-53E
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Goal. Introduce CALs in mountainous terrain in day conditions.

Requirements. Conduct weight and power calculations, execute normal operations, and emergency procedures in 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, and rate of climb).
- Use of parking brake.
- Slope landings.
- IIMC procedures.
- Tail rotor authority/effectiveness at high altitudes.

Introduce:

- Mountainous area operations.
- Pinnacle landings.
- Slope landings.
- Confined area landings.
- Landings and operations in valleys and canyons.
- Crosswind landings.

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. SFAM-2101, ACAD-2008.

CAL-2210	1.5	*	B	D	A	1	CH-53E
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Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain.

Requirements

Discuss:

- CRM
- Dynamic rollover
- Crosswind approaches
- Limitations on landing on unprepared and uneven surfaces
- Vortex Ring State
- Pr>Pa
- Low altitude emergencies
- Loss of visual reference during landing and takeoff
- MFC D Hover Display
- 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
- NAVFLIR Day RVL Landing Code (R)

Introduce:

- Crosswind approaches
- Loss of visual reference during landing and takeoff
- Obstacle takeoffs and approaches

High gross weight takeoffs/landings
LZ Diagrams
Landing and departures to/from a CAL/MAL site

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. 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 max GW takeoffs and landings power shall be limited to 5 percent above 10' hover power. Maintain safe obstacle clearance.

Prerequisites. FAM/INST-2105

Range Requirements. CAL/MAL site

CAL-2211	1.5	365	B,R,M	D	A	2	CH-53E
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Goal. Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain.

Requirements

Discuss:

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

Review:

FORM-2110 and CAL-2210
LZ diagrams, planning and briefing considerations
Loss of visual reference during landing

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point or lead aircraft, conduct a hover and a no hover landing 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-2110 and CAL-2210

Range Requirements. CAL/MAL site.

2.8.3 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 ANTTTP 3-22.3-CH53.

A PUI is TERF qualified when the following flights have been completed: ACAD-2011-2013 and 2042, TERF-2310 and TERF-2311.

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

Crew Requirement. P/P/CC/AO.

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-2011-13,2042

Flight: FAM-2105

Designation/Qualification: H2P

TERF Overview.

TERRAIN FLIGHT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2011	1.0	*	B		G		TERRAIN FLIGHT
ACAD-2012	0.5	365	B,R,M		G		CH-53 APR-39
ACAD-2013	0.5	*	B		G		SURFACE TO AIR THREAT TO THE MAGTF
ACAD-2042	1.0	*	B		G		MFCD
TERF-2310	1.5	*	B	D	A	1	TERF
TERF-2311	1.5	365	B,R,M	D	A	2	SECTION TERF

TERF-2310	1.5	*	B	D	A	1	CH-53E
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Goal. Conduct single ship TERF maneuvers and navigation.

Requirements

Discuss:

- TERF profiles and maneuvers IAW ANTPP 3-22.3-CH53
- TERF rules of conduct IAW T&R Program Manual and local SOPs
- Operational power checks
- Comfort levels
- CRM
- Common terminology
- Route and checkpoint selection
- Route planning tools (JMPS-M, CH-53E UPC, CMDL, KILSWITCH)
- Orientation techniques
- Map preparation
- MFCD map set-up
- Maneuvering at low altitude and high gross weight/high density altitude
- High AOB turns/aerodynamic performance
- Low altitude emergencies
- Obstacle clearance
- Aircraft navigation system

Introduce:

- Plan and brief a TERF route
- Masking/unmasking
- Quick stop
- TERF turn and roll
- Bunts
- Low level and contour profiles
- Tactical approaches
- Operational Power Checks (OPCs)

Single Point Performance Checks (SPPCs)

Performance Standards. Understand OPC and SPPC procedures IAW CH-53 NATOPS. Safely control aircraft in the TERF environment. Remain oriented IAW AS TACSOP 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. 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.

Prerequisites. ACAD-2011-13 and 2042, FAM-2105

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

Range Requirements. Approved TERF maneuver area/route

TERF-2311 1.5 365 B,R,M D A 2 CH-53E

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

Review: FORM-2110 and TERF-2310

Performance Standards. Same as TERF-2310 and incorporate tactical formation maneuvering in the navigation of the route. Perform 1 full COMM and 1 no COMM lead change.

Prerequisites. FORM-2110 and TERF-2310.

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

Range Requirements. Approved TERF maneuver area/route.

2.8.4 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, ANTP series and MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual.

BIP required for EXT-2400, 2410-11, and 2441 initial or refresher flights. NSI required for EXT-2420, 2421, 2430 and 2441 (if conducted at night) initial, refresher or when not NS qualified in light level event is conducted.

Crew Requirement. P/P/CC/AO.

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-2014-2015
Flight: H2P-1902 for sims or FAM-2210 for flights
Designation/Qualification: H2P

EXT Overview.

EXTERNAL LOADS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2014	1.0	365	B,R,M		G		HEAVY LIFT OPS
ACAD-2015	1.0	*	B		G		ASSAULT SUPPORT TO ARTILLERY
SEXT-2400	1.5	*	B,R	D	S	1	HEAVY LIFT SIM

EXTERNAL LOADS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
EXT-2410	1.5	485	B,R	D	A	1	SINGLE POINT EXT
EXT-2411	1.5	365	B,R,M	D	A	1	DUAL POINT EXT
EXT-2420	1.5	485	B,R	NS	A	1	HLL SINGLE POINT EXT
EXT-2421	1.5	180	B,R,M	NS	A	1	HLL DUAL POINT EXT
EXT-2430	1.5	180	B,R,M	NS	A	1	LLL EXT
EXT-2441	1.5	365	B,R,M	(NS)	A	1	HEAVY LIFT EXT

SEXT-2400 1.5 * B,R D S WST/APT

Goal. Conduct heavy external lift operations.

Requirements

Discuss: Same as EXT-2410

Introduce:

Techniques for heavy 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 +/- 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, OPCs, SPPCs (if required) and in zone power computations using actual ambient conditions.

Prerequisites. H2P-1902, ACAD-2014-2015, 2101

External Syllabus Support. WST/APT

EXT-2410 1.5 485 B,R D A 1 CH-53E

Goal. Conduct single point external operations.

Requirement

Discuss:

CRM
Comfort level
Preflight planning to include power computations, weight and balance considerations, Operational Power Checks, and Single Point Performance Checks
External load information/characteristics
Hook preflight/Hook checks
Fuel Dump procedures/Aux tank jettison
Form F
Vortex Ring State
Emergency procedures during external operations
MFC D Hover Display set-up and usage for externals
Cargo jettison procedures
Switchology
Inadvertent hook release
Pilot Induced Oscillations (PIO)
HST operation and safety brief
Wave-off with the load
Reduced visibility conditions
Precision approach techniques

Introduce:

Single point system preflight
Single point external operations to a confined area
External lift procedures
In-flight weight and power computations
Operational Power Checks (OPCs)
Single Point Performance Checks (SPPCs)
In-zone weight and power computations
Cargo hook control panel switchology

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, OPCs, SPPCs (if required) and in zone power computations using actual ambient conditions.

Prerequisites. ACAD-2014, CAL-2210, 2400

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point loads.

EXT-2411 1.5 365 B,R,M D A 1 CH-53E

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
Operational Power Checks (OPCs)
Single Point Performance Checks (SPPCs)
In-zone weight and power computations

Performance Standards. Same as EXT-2410.

Prerequisites. ACAD-2014, CAL-2210

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST, dual point load

EXT-2420 1.5 485 B,R HLL A 1 CH-53E

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.

Prerequisites. HLL-2220 and EXT-2410

Instructor: NSI required for initial flights, refresher or when not NS qualified in HLL conditions FRS NS qualified.

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST, single point load

EXT-2421	1.5	180	B,R,M	HLL	A	1	CH-53E
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Goal. Conduct NS HLL dual point externals (53E).

Requirements

Instructor: NSI required for initial flights, refresher or when not NS qualified in HLL conditions or FRS NS qualified.

Discuss: Same as HLL-2220 and EXT-2411

Introduce: NS HLL dual point externals to a confined area

Review: Same as EXT-2220 and EXT-2411

Performance Standards. Same as EXT-2410.

Prerequisite. HLL-2220 and EXT-2411.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST, dual point load.

EXT-2430	1.5	180	B,R,M	LLL	A	1	CH-53E
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Goal. Conduct LLL NS external operations, dual point preferred.

Requirements

Discuss: Same as EXT-2420 (single point) and EXT-2421 (dual point)

Introduce: LLL NS externals

Review: EXT-2420 (single point) and EXT-2421 (dual point)

Performance Standards. Same as EXT-2410.

Prerequisites. NSQ-HLL, EXT-2420 and 2421, CAL-2230.

Instructor: NSI required for initial flights, refresher or when not NS qualified in LLL conditions.

Range Requirements. CAL/MAL site.

External Syllabus Support. HST and single or dual point load.

EXT-2441	1.5	365	B,R,M	(NS)	A	1	CH-53E
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Goal. Conduct heavy external lift operations with an emphasis on minimum power margin situations.

Requirements

Discuss:

Same as EXT-2410

Techniques for heavy external lift operations

Minimum power margin based on operating environment

Loss of tail rotor authority

Introduce:

Techniques for heavy external lift operations

Emergency procedures during external operations

Review:

EXT-2410
Max gross weight take off

Performance Standards. Conduct external lift operations with power available artificially limited to 5% above power required (with load) in a 40 foot hover.

Prerequisites. TERF-2310, EXT-2400, EXT-2410 (for single point operations) or EXT-2411 (for dual point operations). If conducted under HLL conditions: HLL-2420 (for single point operations) or EXT-HLL-2421 (for dual point operations). If conducted under LLL conditions: LLL-2430.

Range Requirements. CAL/MAL site

External Syllabus Support. HST and single or dual point load

2.8.5 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 threats.

General. Initial GTR-2500 and 2540 shall be conducted in daytime conditions. WTI or DMI is required for initial flights or refreshers. GTR events shall be flown with operational ASE, MWPC GAU-21 installed at a minimum (rounds and expendables optional).

Crew Requirement. P/P/CC/AO.

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-2016, NTTP 3-22.3 Appendix B

Flight: TERF-2311

Designation/Qualification: H2P

GTR Overview.

GROUND THREAT REACTION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2016	1.0	*	B		G		CH-53 DM/GTR I
ACAD-2017	1.8	365	B,R,M		G		IR SAM THREAT TO ASSAULT SUPPORT
ACAD-2019	1.0	365	B,R,M		G		AAQ-24
ACAD-2020	0.8	*	B		G		ADA THREAT TO ASSAULT SUPPORT
ACAD-2021	1.0	*	B		G		EVASIVE MANEUVERS AND COUNTER TACTICS
SGTR-2500	1.5	*	B	(NS)	S	1	GTR AND ASE FAM SIM
GTR-2540	1.5	365	B,R,M	(NS)	A	2	NON RADAR GTR

SGTR-2500 1.5 * B (NS) S WST/APT

Goal. Introduce ground threat reactions and ASE.

Requirements

Discuss:

Operation of the ALE-47, APR-39, AAQ-24, and AAR-47
The strengths and weaknesses of each ASE system 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

Introduce:

Search, acquisition, track, and missile alert signals of all applicable threat systems on APR-39 and AAR-47
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.

Prerequisites. 2016-2021, 2311

Instructor: WTI or DMI required for initial flights

External Syllabus Support. WST/APT with operable ASE

GTR-2540	1.5	365	B,R,M	(NS)	A	2	CH-53E
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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
TACFORM
Inter- and intra-aircraft communications and standard terminology
Threat identification and rules of engagement
5 axioms of survival
High, medium and low altitude tactics
MFCD threat display

Introduce:

Tactical maneuvering and ASE employment to counter the threat
Inter- and intra-aircraft communications and standard terminology

Review:

Same as GTR-2500
TACFORM maneuvering
TERF

Performance Standards. Effectively maneuver aircraft against various non-radar 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.

Prerequisites. TERF-2311 and GTR-2500. If flown under HLL conditions, TERF-2321. If flown under LLL conditions, NSQ-HLL, TERF-2331. AG-2810 (if .50 cal to be employed).

Instructor: WTI or DMI required for initial flights, refreshers, delinquent, or when not NS qualified in the light level event is conducted.

Ordinance. 60 flares minimum

Range Requirements. Live Fire Range (as required), Expendable capable range. Approved TERF maneuver area/route

External Syllabus Support. Ground-based non-radar threat simulators are required for Basic (B) and Refresher (R) POI (e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, and target lights).

Ground based non-radar threat simulators are not required for proficient aircrew, or delinquent aircrew not in a Refresher POI, and the event can be logged. GTR should be incorporated into all tactical evolutions. A basic example of incorporating GTR training for these aircrew is a non-radar threat call over intra-flight and appropriate TACFORM maneuvering.

2.8.6 Helicopter Air to Air Refueling (HAAR)

Purpose. To introduce HAAR.

General. KC-130 support required for all HAAR training evolutions. Discuss and become thoroughly familiar with all HAAR procedures and aspects of CRM as described in the CH-53E NATOPS Manual, ANTTP 3-22.3 CH-53 and the ATP-3.3.4.2 ARI required for initial flights and refreshers. ARI must be an NSI for HAAR-2640 if PUI is not NSQ for the appropriate light level. Successful completion of each initial or refresher flight requires a minimum of 3 contacts with demonstrated proficiency and movement to the refueling position. The ARI shall ensure PUI's ATF is annotated with seat, hose position and number of contacts for each flight.

Crew Requirement. P/P/CC/AO.

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

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Helicopter Air to Air Refueling stage:

Academic: ACAD-2022
Flight: FAM-2105
Designation/Qualification: H2P

HAAR Overview.

HELICOPTER AIR TO AIR REFUELING STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2022	1.0	365	B,R,M		G		HAAR
SHAAR-2600	1.5	*	B	D	S	1	DAY HAAR SIM
SHAAR-2601	1.5	*	B	NS	S	1	NS HAAR SIM
HAAR-2610	1.5	*	B	D	A	1+	DAY LEFT HOSE PREFERRED
HAAR-2611	1.5	180	B,R,M	D	A	1+	DAY LEFT AND RIGHT HOSE
HAAR-2640	1.5	180	B,R,M	NS	A	1+	NS HAAR

SHAAR-2600 1.5 * B D S 1 WST/APT

Goal. Conduct day HAAR.

Requirements

Instructor: ARI required for initial flights.

Discuss:

ATP-3.3.4.2
CRM
Comfort level

Rendezvous procedures, both VMC and IMC
Voice procedures
Join-up procedures
Airspeeds/altitudes
Crossovers
Hose response/markings
Inadvertent disconnects
HAAR emergencies
Control inputs and tip path awareness
Blade stall
NATOPS HAAR envelope chart

Introduce:

Precontact checklist
Rendezvous/join-up
Observation/astern/contact/refuel/disconnect positions
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.

Prerequisite. ACAD-2022, 2100

External Syllabus Support. WST/APT

SHAAR-2601	1.5	*	B	NS	S	1	WST/APT
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Goal. Conduct NS HAAR.

Requirements.

Discuss:

Same as HAAR-2600
Night fixation and scan techniques
NS failures
Inadvertent IMC
Vertigo/disorientation
Night HAAR lighting
NS/HNVS considerations
Light Level Planning considerations
Night movement around tanker
Multiple receiver conduct at night
Closure rates
Depth perception
Receiver/tanker lighting
Visual illusions
Inadvertent IMC
EMCON visual signals
NS emergencies

Introduce: NS helicopter air to air refueling.

Review: HAAR-2600.

Performance Standards. Conduct the precontact 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.

Prerequisite. HAAR-2600

Instructor: ARI is required for initial flights.

External Syllabus Support. WST/APT

HAAR-2610 1.5 * B D A 1+ CH-53E

Goal. Conduct day HAAR, left hose preferred.

Requirements

Discuss: Same as HAAR-2600

Review: HAAR-2600

Performance Standards. Conduct the precontact 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 seat, left hose is preferred.

Prerequisite. FAM-2110, HAAR-2600

Instructor: ARI required for initial flights.

Range Requirements. Special use airspace

External Syllabus Support. 1 KC-130 tanker

HAAR-2611 1.5 180 B,R,M D A 1+ CH-53E

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,M NS A 1+ CH-53E

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-2601 and 2611. If flown under HLL conditions, HLL-2101 and 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.

2.8.7 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/AO/G.

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: N/A

Flight: FAM-2105

Designation/Qualification: H2P

AG Overview.

AERIAL GUNNERY STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2024	1.0	*	B		G		WEAPONS EMPLOYMENT TECHNIQUES
AG-2810	1.5	*	B	D	A	1+	AERIAL GUNNERY
AG-2840	1.5	365	B,R,M	NS	A	1+	NS AERIAL GUNNERY

AG-2810 1.5 * B D A 1+ CH-53E

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 ANTPP 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
Race track, L, and Dogbone patterns
Pattern reversals / Theory of K
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. FAM-2105, 2023-2025

Ordnance. Minimum of 2 .50 Cal (TG optional), and appropriate .50 CAL ammo

Range Requirements. Live fire AG(.50 cal) approved and laser safe range.

AG-2840 1.5 365 B,R,M NS A 1+ CH-53E

Goal. To introduce NS AG employment.

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-2101, if flown LLL, HLL-NSQ.

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

2.8.8 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-53 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/AO.

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 stage:

Academic: N/A

Flight: CAL-2211

Designation/Qualification: H2P

TAC Overview.

TACTICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2027	1.0	365	B,R,M		G		OBJ AREA PLANNING

TACTICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2028	1.0	*	B		G		ROE
ACAD-2029	0.5	*	B		G		EXECUTION CHECKLIST
ACAD-2030	0.5	365	B,R,M		G		PROBLEM FRAMING
TAC-2910	2.0	*	B	D	A	2+	LOW THREAT LEVEL TACTICS
TAC-2911	2.0	365	B,R,M	D	A	2+	MEDIUM THREAT LEVEL TACTICS

TAC-2910 2.0 * B D A 2+ CH-53E

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-53E UPC Mission Data

JMPS-M CH-53E 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:

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. Plan and brief a tactical mission IAW ASTACSOP and ANTPP 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 ± 30 sec of L-Hour and within 2 rotors of prebriefed landing point and or the lead aircraft.

Prerequisite. CAL-2211, TERF-2311 (if flown in TERF regime), AG-2810 (if .50 cal to be employed), 2027-2030

Ordinance. 2 .50 cals 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-53E
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Goal. Conduct assault support tactical missions in a medium threat environment.

Requirements

Discuss:

Same as TAC-2920

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 and or the lead aircraft.

Prerequisites. TAC-2910

Ordnance. 2 .50 cals 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

2.8.9 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) 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.

A PUI is NSQ HLL (qualified to transport troops in HLL conditions) when the following flights have been completed: SHLL-2101, HLL-2120, HLL-2220, HLL-2221, HLL-2320, HLL-2321, and HLL-2920. Pilots shall fly the above listed flights, HLL-2420 and HLL-2421 under ambient light conditions greater than or equal to .0022 lux.

Successful completion of ACAD 2031-2036 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 stage:

Academic: ACAD-2031
Flight: FAM-2100 FORM-2110 for all others
Designation/Qualification: H2P

HLL Overview.

HIGH LIGHT LEVEL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2031	1.0	*	B		G		AN/AVS-9 COMPONENTS AND PREFLIGHT
ACAD-2032	1.0	*	B		G		NVG SYSTEMS AND IMAGE CHARACTERISTICS
ACAD-2033	1.0	*	B		G		NIGHT OPERATIONAL ENVIRONMENT
ACAD-2034	1.0	*	B		G		NVG MISPERCEPTIONS AND ILLUSIONS
ACAD-2035	1.0	*	B		G		NVD ROUTE CONSIDERATIONS
ACAD-2036	1.0	*	B		G	1	NIGHT OPERATIONS AND PLANNING CONSIDERATIONS
SHLL-2102	1.5	*	B	HLL	S	1	OPERATIONS OF A/C NS
HLL-2120	1.5	*	B	HLL	A	2	HLL FORM
HLL-2220	1.5	*	B	HLL	A	1	HLL CALS
HLL-2221	1.5	180	B,R,M	HLL	A	2	HLL SECTION CALS
HLL-2320	1.5	*	B	HLL	A	1	HLL TERF
HLL-2321	1.5	180	B,R,M	HLL	A	2	HLL SECTION TERF

HIGH LIGHT LEVEL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
HLL-2920	2.0	365	B,R,M	HLL	A	2+	HLL CHECK/ LOW THREAT TACTICS

SHLL-2102 1.5 * B NS S/A 1 WST/APT/CH-53E

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
ANVIS-7 Heads-Up Display (HUD)
HUD operation, limitations, switchology, functionality/ image.
MFCD/HNVS FLIR AAQ-29
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.

Performance Standards. Demonstrate basic proficiency, knowledge, and the operation of the ANVIS-7 HUD, AAQ-29, and aircraft lighting.

Prerequisites. ACAD-2031, FAM-2100.

Instructor: NSI required for initial flights

External Syllabus Support. WST/APT. If WST/APT unavailable, a static aircraft with APP power is acceptable.

HLL-2120 1.5 * B HLL A 2 CH-53E

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 Mission Planning
FLIR/HNVS considerations
Differences in AN/AVS-9 NVGs

Strengths and weaknesses of WP-B-01 NVGs

Introduce:

NS formation flight

NS tactical formation maneuvers navigation to include GPS and HNVS checkpoint identification

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-CH53. Successfully execute inadvertent IMC breakup and rendezvous IAW ASTACSOP. Conduct Operational Power Checks and Single Point Performance Checks.

Prerequisites. FORM-2110 and SHLL-2102.

Instructor: NSI required for initial flights, refreshers or when not HLL qualified or FRS NS qualified.

HLL-2220 1.5 * B HLL A 1 CH-53E

Goal. Conduct single-ship confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS, emphasizing low work.

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
Differences in AN/AVS-9 NVGs
Strengths and weaknesses of WP-B-01 NVGs
NAVFLIR Night RVL Landing Code (S)

Introduce:

NS CALs/MALs

NS low work

MFCD Hover Display use for low work and approach procedures

Review:

FAM/INST-2101

CAL-2210

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point. 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 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 max GW takeoffs and landings power shall be limited to 5 percent above 10' hover power. Maintain safe obstacle clearance. Conduct NS low work.

Instructor: NSI required for initial flights, refreshers or when not NS HLL or FRS NS qualified.

Prerequisites: CAL-2210 and SHLL-2102.

Range Requirements: CAL/MAL site.

HLL-2221 1.5 180 B,R,M HLL A 2 CH-53E

Goal: Conduct section confined area approaches, landings, and departures and introduce tactical approaches to confined areas/mountainous terrain utilizing NS.

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: CAL-2211, HLL-2120, HLL-2220

Instructor: NSI required for initial flights, refresher or when not HLL or FRS NS qualified.

Range Requirements: CAL/MAL site

HLL-2320 1.5 * B HLL A 1 CH-53E

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 RW TACSOP 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. 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 ANTTP 3.22.3.

Prerequisite. TERF-2310 and SHLL-2102.

Instructor: NSI required for initial flights or when not HLL qualified.

Range Requirements. Approved TERF maneuver area/route.

HLL-2321 1.5 180 B,R,M HLL A 2 CH-53E

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,M HLL A 2+ CH-53E

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 and HUD operations

Performance Standards. Same as TAC-2910.

Prerequisite. HLL-2221 and 2222, HLL-2321, and TAC-2910 (AG-2810 if .50 cal to be employed)

Instructor: NSI required for initial qualification, refresher or if PUI not proficient

Ordinance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R)

Range Requirements. Live fire AG(.50 cal) approved and laser safe range. CAL/MAL site. Approved TERF maneuver area/route

2.8.10 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) 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) at the completion of the following flights: LLL-2230, LLL-2231, LLL-2330, LLL-2331, and LLL-2930. Pilots shall fly the above listed flights and EXT-2430 under ambient light conditions of less than .0022 lux.

Successful completion of ACAD-2037-2041, ACPM 8200-8250, 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/AGO.

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:

Academic: N/A

Flight: NSQ-HLL

Designation/Qualification: H2P

LLL Overview.

LOW LIGHT LEVEL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-2037	1.0	*	B		G		HUMAN FACTORS
ACAD-2039	1.0	*	B		G		CH-53 HNVS FLIR
ACAD-2040	1.0	*	B		G		ASSAULT SUPPORT ESCORT TACTICS
ACAD-2041	0.5	*	B		G		BATTLEFIELD ILLUMINATION AND FIXED WING ITG
LLL-2230	1.5	*	B	LLL	A	1	LLL CALS
LLL-2231	1.5	180	B,R,M	LLL	A	2	LLL SECTION CALS
LLL-2330	1.5	*	B	LLL	A	1	LLL TERF
LLL-2331	1.5	180	B,R,M	LLL	A	2	LLL SECTION TERF
LLL-2930	2.0	365	B,R,M	LLL	A	2+	LLL CHECK/MED THREAT TACTICS

LLL-2230 1.5 * B LLL A 1 CH-53E

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. NSQ HLL.

Range Requirements. CAL/MAL site

LLL-2231 1.5 180 B,R,M LLL A 2 CH-53E

Goal. Conduct section 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-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.

LLL-2330 1.5 * B LLL A 1 CH-53E

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. NSQ HLL.

Range Requirements. Approved TERF maneuver area/route.

LLL-2331 1.5 180 B,R,M LLL A 2 CH-53E

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. TERF maneuver area/route

LLL-2930 2.0 365 B,R,M LLL A 2+ CH-53E

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
JMPS-M CH-53E UPC IDM Set-up
MFCD IDM and BFT
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 TAC-2911 (AG-2810 if .50 cal to be employed)

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R)

Range Requirements. Live fire AG(.50 cal) approved and laser safe range. CAL/MAL site. Approved TERF maneuver area/route

2.9 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. The Mission Phase has 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 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, and AO) within the aircraft that meet the prerequisite. Additionally, for larger flights, any flight lead, (SL,DL,AFL,and 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 AT-3340. 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.

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 Phase training events may be logged per sortie (e.g. AT-3340, and AD-3540) 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-3340, AD-3540, LLL-2930, EXT-2430, EXT-2440, 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 applies. 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 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:

- 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)

Crew Requirements. P/P/CC/AG

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; 2016,2017,2019,2020,2500,2540 // AG CSP; 2023,2024,2025,2810,2840 // TAC CSP; 2027,2028,2029,2030,2910,2911 // NS LLL CSP; 2037,2039,2040,2041,2230,2231,2330,2331,2930 // EXT CSP 2014,2015,2400,2410,2411,2420,2421,2430,2441// HAAR CSP 2101,2120,2601,2610,2611,2640

Stages. The following stages are included in the Mission Skill phase.

MISSION SKILL PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.9.1	2-75
COMBAT ASSAULT TRANSPORT (CAT)	2.9.2	2-76
AERIAL DELIVERY (AD)	2.9.2	2-77
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)	2.9.2	2-77
AIR EVACUATION (AE)	2.9.2	2-78

2.9.1 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 are located at the MAWTS-1 NIPR website:

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

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under courseware:

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

Prerequisites. The following events/designations are prerequisites prior to the commencement of the Mission Skill Phase.

- Academic: See event
- Flight: LLL-2930
- Designation/Qualification: NSQ-LLL

Mission Skill Academics Overview.

MISSION SKILL PHASE ACADEMICS						
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM
ACAD-3000	1.0	*	B		G	
ACAD-3001	0.7	*	B		G	

MISSION SKILL PHASE ACADEMICS							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-3002	0.8	*	B		G		NEO EXECUTION
ACAD-3003	0.8	*	B		G		INTEL PREP OF THE BATTLESPACE
ACAD-3004	1.0	*	B		G		PERSONNEL RECOVERY
ACAD-3005	0.8	*	B		G		TRAP TTPS
ACAD-3006	0.5	*	B		G		CASEVAC
ACAD-3007	1.0	*	B		G		CIRCADIAN RHYTHM AND FATIGUE
ACAD-3008	1.0	*	B		G		INTRO TO NVG TACTICAL EMPLOYMENT

2.9.2 Flight Events

Mission Skill Phase Overview.

MISSION SKILL PHASE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CAT-3240	2.0	120	B,R,M	(N)	A/S	2+	COMBAT ASSAULT TRANS
AD-3340	2.0	120	B,R,M	(N)	A/S	2+	AERIAL DELIVERY
TRAP-3440	2.0	120	B,R,M	(N)	A/S	2+	TRAP
AE-3540	2.0	120	B,R,M	(N)	A/S	2+	AIR EVACUATION

CAT-3240 2.0 120 B,R,M (N) A/S 2+ CH-53E/WST/APT TEN+

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).

Requirements

Discuss: Same as 2920.

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-3002-3003, ACPM-8320

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.

AD-3340 2.0 120 B,R,M (N) A/S 2+ CH-53E/WST/APT TEN+

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, tiltrotor 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

Discuss:

Same as EXT-2430
Same as LLL-2930
Same as HIE-4110, 4140, or 4141 (as required)

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 sec.

Prerequisites. NSQ LLL, ACPM-8321-8326

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

TRAP-3440	2.0	120	B,R,M	(N)	A/S	2+	CH-53E/WST/APT TEN+
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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 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

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-3004, 3005, ACPM-8340

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.

AE-3540	2.0	120	B,R,M	(N)	A/S	2+	CH-53/WST/APT TEN+
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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, tiltrotor, 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, 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-3006-3008 and ACPM 8350-51

Academic training. ACAD-3002 and 3006

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

2.10 CORE PLUS PHASE (4000)

Purpose. To introduce and develop proficiency in the execution of the Core Plus events required as a pilot within a Marine Heavy Helicopter Squadron (HMH). 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 Basic Instructor Pilot (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)	2.10.1	2-79
HELICOPTER INSERTION/ EXTRACTION (HIE)	2.10.2	2-79
BATTLEFIELD ILLUMINATION (BI)	2.10.3	2-81
TERRAIN FLIGHT EXTERNALS (EXT)	2.10.4	2-82
GROUND THREAT REACTION (GTR)	2.10.5	2-84
DEFENSIVE MEASURES (DM)	2.10.6	2-85
CHEMICAL/ BIOLOGICAL/ RADIOLOGICAL/ NUCLEAR (CBRN)	2.10.7	2-87
FIELD CARRIER LANDING PRACTICE (FCLP)	2.10.8	2-88
DAY CARRIER QUALIFICATION (DAY CQ)	2.10.9	2-89
UNAIDED CARRIER QUALIFICATION (UNAIDED CQ)	2.10.10	2-90
NIGHT SYSTEMS CARRIER QUALIFICATION (NVG CQ)	2.10.11	2-91
TACTICS (TAC)	2.10.12	2-92

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

2.10.1 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 and IAW paragraph 206 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 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.

2000-6000 classes are located at the MAWTS-1 NIPR website:

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

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under courseware:

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

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

2.10.2 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.

Crew Requirements. P/P/CC/AO.

Academic Training. The MAWTS-1 CH-53 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

HIE Overview.

HELICOPTER INSERTION/EXTRACTION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
HIE-4110	1.5	485	B,R,M		A	1	HELOCAST
HIE-4140	1.5	*	B	(NS)	A	1	FASTROPE/RAPPEL
HIE-4141	1.5	*	B	(NS)	A	1	PARAOPS

HIE-4110	1.5	485	B,R,M	D	A	1	CH-53E
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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 3-11.3A Special Forces Waterborne Operations

Introduce:

Techniques for inserting personnel by helocast
Signals/communications with jump master
Precision taxi

Performance Standards. Execute approach/hover within ± 5 ft/ ± 3 kts of intended altitude and ground speed.

Prerequisites. TERF-2311

Range Requirements. Approved helocast drop zone

External Syllabus Support. Jump master, safety boat and safety personnel

HIE-4140	1.5	*	B	(NS)	A	1	CH-53E
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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
MFC D Hover Display Utilization
MCRP 3-01B.1 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. CAL-2311 for day. NSQ for appropriate light level

Range Requirements. Suitable CAL/MAL site

External Syllabus Support. HRST Master and ground safety personnel

HIE-4141	1.5	*	B	(NS)	A	1	CH-53E
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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
MFC D Moving Map utilization
Static vs. Freefall

Introduce:

Techniques for inserting personnel by para ops
Signals/communications with jump master

Performance Standards. Fly within $\pm 50'$ of designated altitude and ± 5 kts of designated airspeed.

Prerequisites. CAL-2311 for day. NSQ for appropriate light level.

Range Requirements. Approved drop zone.

External Syllabus Support. Jump master and ground safety personnel.

2.10.3 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-53E, in support of air or ground forces.

General. Review operational and safety considerations discussed in the A1-H53BE-NFM-000 NATOPS Flight Manual, ANTTP 3-22.3-CH-53 and NTRP 3-22.4 CH-53.

NSI required if not qualified in light level.

Crew Requirement. P/P/CC/AO.

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: ACAD-2041
Flight: HLL-2920
Designation/Qualification: H2P

BI Overview.

BATTLEFIELD ILLUMINATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
BI-4340	1.0	*	B	NS	A	1	BATTLEFIELD ILLUMINATION

BI-4340 1.5 * B,R,M NS A 1 CH-53E

Goal. Conduct Aviation-Delivered Battlefield Illumination in support of night tactical operations.

Requirement.

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.

Review: N/A.

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 ANTP 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. ACAD-2041, LLL-2920

Range Requirements. Approved range for the deployment of APFs

Ordnance Requirements. LUU-2 or LUU-19 Series APFs

2.10.4 Terrain Flight External Loads (EXT)

Purpose. To develop skills necessary for operating with external loads in all ambient conditions in the terrain flight regime.

General. Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTP series and MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual.

TERFI required for EXT-4412 initial, refresher or when not TERF qualified.

NSI required for EXT-4440 initial, refresher or when not NS qualified in light level event is conducted.

Crew Requirement. P/P/CC/AO.

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-2011, 2012, 2014, 2021, 4000

Flight: EXT-2400, 2210, 2310, 2410.

Designation/Qualification: H2P

TERF EXT Overview.

TERRAIN FLIGHT EXTERNAL STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SEXT-4412	1.5	365	B,R	D	S/A	1	DAY TERF EXTERNALS
SEXT-4440	1.5	365	B,R,M	NS	S/A	1	NS TERF EXTERNALS

SEXT-4412 1.5 365 B,R D S/A 1 WST/APT/EAT/CH-53E

Goal. Conduct external flight in the TERF profile

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 +/- 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, OPCs, SPPCs (if required) and in zone power computations using actual ambient conditions. Minimum of 1 pickup and delivery required.

Instructor: TERFI required for all initial flights and refresher

Prerequisite: CAL-2210, TERF-2310, and EXT-2410 or EXT-2411 (if done dual point), 2500

Range Requirements: Approved CAL/MAL site. Approved TERF maneuver area/route

External Syllabus Support: Initial events to be conducted in the aircraft. WST/APT and EAT if conducted in sim. HST, single or dual point load if conducted in the aircraft.

EXT-4440	1.5	365	B,R,M	NS	S/A	1	WST/APT/EAT/CH-53E
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Goal: Conduct external flight in the TERF profile utilizing NS.

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: 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

Range Requirements: CAL/MAL site. TERF maneuver area/route

External Syllabus Support: Initial events to be conducted in the aircraft. WST/APT and EAT if conducted in the sim. HST, single or dual point load if conducted in the aircraft.

2.10.5 Ground Threat Reaction (GTR)

Purpose: To introduce and develop proficiency in using ASE and tactics to defeat ground-based radar threats.

General: Pilots shall conduct this stage against an electromagnetic threat simulator. Understanding of the APR-39 and ALE-47 is essential in preparing aircrew prior to and executing the flight.

Crew Requirement: P/P/CC/AO.

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

Prerequisites: The following events/designations are prerequisites prior to the commencement of the stage Ground Threat Reaction stage:

Academic: GTR program guide, ACAD-4000 and ACAD-4012
Flight: TERF-2311
Designation/Qualification: TERF Qualified

GTR Overview:

RADAR GROUND THREAT REACTION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4000	0.5	*	B		G		RF SAMS
ACAD-4012	1.0	*	B		G		RADAR PRINCIPLES
GTR-4540	1.5	365	B,R,M	(NS)	A	2	RADAR GTR

GTR-4540 1.5 365 B,R,M (NS) A 2 CH-53E

Goal. Conduct GTR while employing ASE against various ground-based radar threats.

Requirements. Operable APR-39

Discuss:

Operations of the ALE-47 and APR-39
Types of expendables
The strengths and weaknesses of each ASE system versus ground-to-air and air-to-air threats.
Current MDF and OFP
Backplate settings
CRM
Section tactics and tactical maneuvering against ground-based threat systems
Use of radar horizon, ground clutter, radar resolution cells, and radar masking techniques
MFC D threat display

Introduce:

Various threat signatures concentrating on threat recognition and detection
Surface fires evasive maneuvers coordinated with the dispensing of chaff.
Section maneuvering against radar guided threats on an EW range or with an emitter
Section threat avoidance, masking and the use of chaff and flares

Performance Standards. Effectively maneuver aircraft against various ground-based radar threats. Utilize standard terminology in inter- and intra-aircraft communications. Demonstrate working knowledge of ASE. Conduct range estimation. flat open terrain demo, background clutter demo, terrain masking demo, and an any aspect engagement against a radar threat.

Instructor: DMI or WTI for initial flights, refreshers. NSI/DMI is required if not NS qualified in light level event is conducted

Prerequisite. TERF-2311, GTR-2500, ACAD-4000, 4012

Ordnance. 60 Chaff

Range Requirements: EW range or emitter with threat systems to include electromagnetic and ground based threat simulation. Emitter should include search, acquisition, and track capabilities. Expendables capable range as appropriate.

External Syllabus Support. Emitter with various threat system simulation.

2.10.6 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-4520 and DM-4521.

Crew Requirements. P/P/CC/AO.

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: NTPP 3-22.3 Appendix A. ACAD-4000-4005

Flight: TERF-2311

Designation/Qualification: TERF Qualified

DM Overview.

DEFENSIVE MEASURES STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4001	0.7	*	B		G		DM GAME PLANNING
ACAD-4002	1.5	*	B		G		CH-53 DM/GTR II
ACAD-4003	1.0	*	B		G		HELICOPTER PS/EM
ACAD-4004	1.0	*	B		G		FW THREAT TO ASSAULT SUPPORT
ACAD-4005	0.5	*	B		G		ATTACK HELO THREAT TO ASSAULT SUPPORT
DM-4510	1.5	365	B,R,M	D	A	2	RW DM
DM-4511	1.5	365	B,R,M	D	A	2	FW DM

DM-4510 1.5 365 B,R,M D A 2 CH-53E

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
MFC 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-4001-4005. TERF-2311 proficient

Ordnance. 60 flares

Range Requirements. Special use airspace. Expendable capable range. Approved TERF maneuver area

External Syllabus Support. RW aircraft to serve as aggressor

DM-4511	1.5	365	B,R,M	D	A	2	CH-53E
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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
- MFCDD 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-4001-4005. TERF-2311 proficient.

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.

2.10.7 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 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:
Flight: FAM-2105
Designation/Qualification: H2P

CBRN Overview.

CHEMICAL/BIOLOGICAL/RADIOLOGICAL/NUCLEAR STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CBRN-4600	1.5	*	B	(N)	S/A	1	CBRN FAM
SCBRN-4600	1.5	*	B	(N)	S/A	1	WST/APT/CH-53E

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 is not NS qualified in light level event is conducted

Prerequisite. CAL-2105 for day, CAL-2220 for HLL, CAL-2230 for LLL

Range Requirements. CAL/MAL site

2.10.8 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-53E NATOPS, Chapter 8, 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. CQ-4742 requires an NSI when not NS qualified in light level event is conducted.

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/AO.

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:

Designation/Qualification: H2P

FCLP Overview.

FIELD CARRIER LANDING PRACTICE STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4014	1.0	*	B,R		G		SHIPBOARD OPERATIONS
SFCLP-4700	1.5	*	B	(N)	S	1	SIM CQ
FCLP-4710	1.5	365	B,R,M	D	A	1	DAY FCLP
FCLP-4740	1.5	365	B,R,M	NS	A	1	NS FCLP

SFCLP-4700	1.5	*	B	(N)	S	1	WST/APT
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Goal. Conduct day and NS simulated shipboard flight operations.

Requirements

Discuss:

Blade/pylon fold procedures

Introduce:

TACAN and CCA approaches in IMC or night conditions

minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. SFAM-2100 and ACAD-4014

External Syllabus Support. WST/APT

FCLP-4710	1.5	365	B,R,M	D	A	1	CH-53E
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Goal. Conduct day FCLP.

Requirements

Discuss: Same as FCLP-4700

Introduce: FCLPs

Review: FCLP-4700

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,M NS A 1 CH-53E

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

2.10.9 Day Carrier Qualification (Day CQ)

Purpose. To qualify pilots for day shipboard operations. The term "day carrier qualification" encompasses all shipboard day 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 FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53E NATOPS, Chapter 8, 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.

Crew Requirement. CQ-4711: P/P/CC. For passenger and cargo operations, the crew requirement is P/P/CC/AO.

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.

Designation/Qualification: H2P

Day CQ Overview.

DAY CARRIER QUALIFICATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CQ-4711	1.5	365	B,R,M	D	A	1	DAY CQ

CQ-4711 1.5 365 B,R,M D A 1 CH-53E

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. FCLP-4710.

External Syllabus Support. Helicopter capable ship.

2.10.10 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-53E 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 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/AO

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

Night Unaided CQ Overview.

NIGHT UNAIDED CARRIER QUALIFICATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CQ-4741	1.0	365	B, R,M	N	A/S	1	NIGHT UNAIDED CQ
CQ-4741	1.0	365	B,R,M	N*	A/S	1	CH-53E/WST/APT

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 WST/APT.

2.10.11 Night Systems Carrier Qualification (NS CQ)

Purpose. To qualify pilots for NS shipboard 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 night FCLPs shall be accomplished within 30 days prior to shipboard qualifications for initial and requalification flights. Refer to CH-53E 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 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. CQ-4742 requires an NSI. Initial night carrier qualification shall be made under ideal weather conditions to include a visible horizon.

Crew Requirement. CQ-4742: P/P/CC/AO

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 night 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

NVG CQ Overview.

NVG CARRIER QUALIFICATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CQ-4742	1.0	365	B,R,M	NS	A	1	NVG CQ
CQ-4742	1.0	365	B,R,M	NS	A	1	CH-53E

Goal. Conduct NS CQs.

Requirements. Initial CQ-4742 shall be conducted under HLL conditions.

Discuss:

Same as FCLP-4740
Standard CH-53 LHA/LHD landing pattern
Shipboard operations brief
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

2.10.12 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 ANTP 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/AO.

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: N/A
Flight: TAC-2911
Designation/Qualification: H2P

Core Plus TAC Overview.

CORE PLUS TACTICS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4006	1.0	*	B		G		ADGR
ACAD-4007	1.5	*	B		G		URBAN OPERATIONS
ACAD-4013	1.0	*	B		G		AC2
TAC-4940	2.0	365	B,R,M	(NS)	A	3+	DIV TACTICS
TAC-4941	2.0	365	B,R,M	(NS)	A	2+	URBAN TACTICS
TAC-4942	4.0	365	B,R,M	(NS)	A	2+	LONG RANGE TACTICS

TAC-4940 2.0 365 B,R,M (NS) A 3+ ACFT

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 aircraft navigation systems. Arrive in LZ within \pm 30 sec of L-Hour and within 2 rotors of pre-briefed landing point and or lead aircraft.

Instructor: NSI required when not NS qualified in the light level event is conducted.

Prerequisites. TAC-2911

Ordinance. Two .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 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-53E

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 aircraft navigation systems. Arrive in LZ within \pm 30 sec of L-Hour and within 2 rotors of pre-briefed landing point and or lead aircraft.

Instructor: NSI required when not NS qualified in light level event is conducted.

Prerequisites. TAC-2911 and ACAD-4007

Range Requirements. CAL/MAL site in urban environment.

External Syllabus Support. Assault support escort aircraft if available.

TAC-4942	4.0	365	B,R,M	(NS)	A	2	CH-53E
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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 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 aircraft navigation systems. Arrive in LZ within \pm 30 sec of L-Hour and within 2 rotors of pre-briefed landing point and or lead aircraft. 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-4006 and 4013

Ordnance. 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. AGS as required.

2.11 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, and AO) within the aircraft that meet the prerequisite. Additionally, for larger flights, any flight lead, (SL,DL,AFL,and 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, AT-3340, 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. AT-3340, AD-3540, RIE-4980, and 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 (e.g. for pilots: AT-3340, AD-3540, 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 HMH 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)	2.11	2-96
AVIATION DELIVERED GROUND REFUELING (ADGR)	2.11	2-97
EXPEDITIONARY SEA-BASED OPERATIONS (SEA)	2.11	2-97

Crew Requirements. P/P/CC/AG.

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

Mission Plus Phase Overview.

MISSION PLUS STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-4008	1.0	*	B		G		CAS
ACAD-4009	0.8	*	B		G		AIR ASSAULT RAID PLANNING
ACAD-4010	1.0	*	B		G		MAGTF TARGETING AND FIRE SUPPORT PLANNING
ACAD-4011	1.0	*	B		G		TBFDS
RIE-4980	2.0	365	B,R,M	(N)	A/S	1+	RAPID INSERTION/EXTRACTION
ADGR-4981	2.0	365	B,R,M	(N)	A	1+	AVIATION DELIVERED GROUND REFUELING
SEA-4982	2.0	365	B,R,M	(N)	A/S	1+	SEA BASED TACTICS

RIE-4980 2.0 365 B,R,M (N) A/S 1+ CH-53/WST/APT TEN+

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 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 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/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-4008-4010. 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.

ADGR-4981 2.0 365 B,R,M (N) A 1+ CH-53E

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- 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-53 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 \pm 30 sec of L-Hour and within 2 rotors of pre-briefed 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-4011

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.

SEA-4982 2.0 365 B,R,M (N) A/S 1+ CH-53/WST/APT TEN+

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)

Requirement

Discuss:

Same as CQ-2743
Deck cycles
Combat Cargo/troop loading considerations while in shipboard environments
Airspace considerations
IFF procedures

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.

Instructor. NSI required when not NS qualified in the light level event is conducted.

Prerequisite. NSQ LLL and appropriate CQ/FCLP event.

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.

2.12 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.

Stages. The following stages are included in the Instructor Training phase.

INSTRUCTOR PHASE		
STAGE	PARAGRAPH	PAGE NUMBER
ACADEMICS (ACAD)	2.12.1	2-98
BASIC INSTRUCTOR PILOT (BIP)	2.12.2	2-98
TERRAIN FLIGHT INSTRUCTOR (TERFI)	2.12.3	2-101
AERIAL REFUELING INSTRUCTOR (ARI)	2.12.4	2-101
TACTICAL SIMULATOR INSTRUCTOR (TSI)	2.12.5	2-101
FLEET REPLACEMENT SQUADRON INSTRUCTOR (FRSI)	2.12.6	2-103
ADVANCED INSTRUCTOR DESIGNATIONS	2.12.7	2-105
FLIGHT LEADERSHIP STANDARDIZATION INSTRUCTOR (FLSE)	2.12.8	2-105
CONTRACT INSTRUCTOR (CI)	2.12.9	2-106

2.12.1 Academic/Ground Training

Purpose. 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 paragraph 206 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.

2000-6000 classes are located at the MAWTS-1 NIPR website:

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

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

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

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

2.12.2 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 shall be completed in conjunction with the HAC syllabus and is a prerequisite to HAC-6122. 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 HAC-6122, the Squadron commanding officer will designate the PUI a BIP in conjunction with the HAC designation. 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/AO (as required)

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: N/A
Flight: Core and Mission Skill complete
Designation/Qualification: NSQ-LLL

BIP Stage Overview.

BASIC INSTRUCTOR PILOT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-5000	1.0	*	B		G		LEARNING THEORY AND INSTRUCTIONAL TECHNIQUES
SBIP-5100	1.5	*	B	D	S/A	1+	BIP IUT FAM/ CAL/ INST
SBIP-5101	1.5	*	B	D	S/A	1+	BIP IUT EXT/ CQ
BIP-5102	1.5	*	B	D	A	1+	BIP CHECK

SBIP-5100 1.5 * B D S/A 1 WST/APT/CH-53E

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 ATF writing responsibilities.
Proper ATF 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.

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

External Syllabus Support. WST/APT if conducted in the sim

SBIP-5101	1.5	*	B	D	S/A	1	WST/APT/CH-53E
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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, SP/PC/OPC 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.
Air space control in the shipboard environment.
Techniques of instruction WRT to movement around the ship.

Introduce:

Single and dual point 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.

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. WST/APT if conducted in the sim

BIP-5110	1.5	*	B,R	D	A	1	CH-53E
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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 SBIP-5100.

Prerequisites. SBIP-5101.

2.12.3 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.

2.12.4 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.

ARI-5300-5301: Refer to MAWTS-1 CH-53 Course Catalog.

2.12.5 Tactical Simulator Instructor (TSI)

Purpose. To qualify the IUT as a TSI capable of providing tactical simulation training in the CH-53E WST/APT.

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. All HACs designated prior to the signing of this manual will not be required to complete the TSI syllabus and will receive the TSI designation. TSI designation letters for previously designated HACs will reflect the signature date of this manual.

The TSI is qualified to instruct all phases of flight simulation except those requiring NI, ANI, INSTI, ARI, NSI, DMI, or WTI qualifications. The TSI shall demonstrate sound knowledge of all aircraft weapons 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.

TSI Stage Overview.

TACTICAL SIMULATOR INSTRUCTOR STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
TSI-5410	1.0	*	B	(NS)	S	1	SIMULATOR OPERATION DEMO
TSI-5411	1.0	*	B	(NS)	S	1	TACTICAL SIMULATOR INSTRUCTOR CHECK
STSI-5410	1.0	*	B	(NS)	S	WST/APT	

Goal. Simulator control position; Introduce simulator control functions and capabilities.

Requirements

Discuss:

- Learning 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 and adjust environmental conditions.

IUT shall demonstrate the ability to adjust threat conditions.

IUT shall demonstrate the ability to operate the simulator basic shipboard configurations and adjust environmental conditions.

Prerequisites. IUT currently in BIP syllabus

Crew. CSI or TSI/IUT

STSI-5411 1.0 * B (NS) S WST/APT

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 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

Instructor briefing / debriefing techniques

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 enemy threat systems.

IUT shall select and control friendly systems.

Prerequisites. STSI-5410

Crew. TSI/IUT. MATSS TSI preferred.

2.12.6 FRS Day 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 designations are prerequisites for 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

NATOPS: CRMF/I

Designation/Qualification: Section Leader, TERFI, TSI

FRSI Stage Overview.

FRS DAY INSTRUCTOR TRAINING STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
FRSI-E-5500	1.5	*	B	D	A	1	FRSIUT DAY FAM
FRSI-E-5501	2.0	*	B	D	S	1	FRSIUT SIM REV
FRSI-E-5502	2.0	*	B	(N)	S/A	1	FRSIUT INST FAM
FRSI-E-5503	1.5	*	B	D	A	1	FRSIUT DAY CAL
FRSI-E-5504	1.5	*	B	D	A	1	FRSIUT DAY FORM
FRSI-E-5505	1.5	*	B	D	A	2	FRSIUT EXT
FRSI-E-5506	1.5	*	B,R	(N)	A	1	FRSIUT CHECK

FRSI-E-5500 1.5 * B D A 1 CH-53E

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-53E 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 (N) S/A 1 WST/APT/CH-53E

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 mission set(s)

Instructor Requirement: FRSI, CRMI as applicable

Performance Standards: Per CH-53E NATOPS and Maneuver Description Guide

Prerequisites: FRSI-5500

SFRSI-E-5502 2.0 * B (N) S/A 1 WST/APT/CH-53E

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-53E NATOPS and Maneuver Description Guide.

Prerequisite: TERF-5202 and SL-6203

FRSI-E-5503 1.5 * B D A 1 CH-53E

Goal. Review CAL instruction techniques.

Requirements

Discuss:

CRM
Comfort level

Review: All CAL stage maneuvers

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

Range Requirements. CAL/MAL site.

Prerequisites. FRSI-5500

FRSI-E-5504 1.5 * B D A 2 CH-53E

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-53E NATOPS and Maneuver Description Guide.

Prerequisites. FRSI-5500

FRSI-E-5505 1.5 * B D A 1 CH-53E

Goal. Review external operation instructional techniques.

Requirements

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-53E NATOPS and 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.

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-53E

Goal. Flight instructor standardization check.

Requirements

Discuss:

CRM
CH-53E limitations
Course Rules
Maneuver Description Guide
Instruction techniques

Demonstrate:

Ability to execute and instruct Maneuver Description Guide items

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

Prerequisites. FRSI-5500 through FRSI-5505

2.12.7 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.

2.12.8 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.

2.12.9 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 0001-0024, ACAD 0101-0109.

CIUT Stage Overview.

CONTRACT INSTRUCTOR TRAINING STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CIUT-5900	1.0	*	CIUT	D	S	1	INTRO TO COCKPIT PROCEDURES
CIUT-5901	1.0	*	CIUT	D	S	1	INTRO TO A/C EMERGENCIES
CIUT-5902	1.0	*	CIUT	D	S	1	INTRO ENGINE MALFUNCTIONS
CIUT-5903	1.0	*	CIUT	D	S	1	INTRO RUNNING LANDINGS & AUTOS
CIUT-5904	1.0	*	CIUT	D	S	1	INTRO GEARBOX MALFUNCTIONS
CIUT-5905	1.5	*	CIUT	D	S	1	INTRO CRM SKILLS
CIUT-5906	1.0	*	CIUT	D	S	1	PROGRESS CHECK
CIUT-5907	1.5	*	CIUT	D	S	1	ENG FAILURE / LANDINGS
CIUT-5908	1.5	*	CIUT	D	S	1	AFCS FAILURE / FAM
CIUT-5909	1.5	*	CIUT	D	S	1	PRAC FAM
CIUT-5910	1.5	*	CIUT	D	S	1	REV FAM & EPs
CIUT-5911	1.5	*	CIUT	N	S	1	NIGHT FAM
CIUT-5912	1.0	*	CIUT	D	S	1	INTRO BASIC INSTRUMENTS

CONTRACT INSTRUCTOR TRAINING STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CIUT-5913	1.0	*	CIUT	D	S	1	INTRO PARTIAL PANNEL
CIUT-5914	1.0	*	CIUT	D	S	1	INTRO ILS/LOCALIZER
CIUT-5915	1.0	*	CIUT	D	S	1	INTRO UNUSUAL ATTITUDES
CIUT-5916	1.0	*	CIUT	D	S	1	INTRO IFR LOST COMM
CIUT-5917	2.0	*	CIUT	D	S	1	BASIC INST, PRE APP
CIUT-5918	1.5	*	CIUT	D	S	1	IFR ROUTE
CIUT-5920	1.0	*	CIUT	D	S	1	INTRO FLIGHT PLANNING SOFTWARE, GPS, HNVS
CIUT-5921	1.0	*	CIUT	D	S	1	INTRO DAY FORM
CIUT-5922	1.5	*	CIUT	D	S	1	INTRO CALS
CIUT-5923	2.0	*	CIUT	D	S	1	INTRO SINGLE AND DUAL POINTS
CIUT-5924	1.0	*	CIUT	D	S	1	TERF
CIUT-5925	2.0	*	CIUT	D	S	1	REVIEW CIUT
CIUT-5926	2.0	*	CIUT	D	S	1	REVIEW CIUT
CIUT-5927	2.0	*	CIUT	D	S	1	CIUT CHECK
CIUT-5931	1.5	*	CIUT	D	S	1	IP BRIEF
CIUT-5932	1.5	*	CIUT	D	S	1	REVIEW FAM MANEUVERS
CIUT-5933	2.0	*	CIUT	D	S	1	REVIEW BI, AIRWAY NAV
CIUT-5934	1.5	*	CIUT	D	S	1	REVIEW CAL
CIUT-5935	1.5	*	CIUT	D	S	1	REVIEW FORM
CIUT-5936	1.5	*	CIUT	D	S	1	REV EXT OPS
CIUT-5937	1.5	*	CIUT	D	S	1	STAN CHECK

CIUT-5900 1.0 * CIUT D S 1 WST/APT

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

Requirement

Introduce:

- Pre-start checklist
- Post APP start checklist
- Starting engines/rotors checklist
- Pre-taxi checklist
- Cargo ramp and door procedures checklist
- Operation of engine trim switches
- Cruise checklist
- Fuel transfer checklist
- Monitoring of instruments (fuel gauges)
- Operation of the ICS and radios
- Fuel management
- Pre-landing checklist
- Shutdown checklist

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

Prerequisites. CBT and ACAD complete

External Syllabus Support. WST/APT

CIUT-5901 1.0 * CIUT D S 1 WST/APT

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

Requirement

Introduce:

- Aircrew brief.
- External fuel tank jettison.
- Cargo ramp/door operation.
- Engine start emergencies.
- Vertical takeoff to a hover.

Transition to forward flight.
Normal approaches to a hover and normal vertical landing.
Engine compartment fire on the ground.
Single and/or dual engine compartment fires in-flight.
Simultaneous engine compartment fires in-flight.
APP or cabin heater fire.
Fuselage fire.
Fuel dump.
Practice:
Start/shutdown procedures.

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

Prerequisites. 5900

External Syllabus Support. WST/APT

CIUT-5902	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce engine malfunctions. Practice cockpit and flight procedures, start/shutdown checklist and all previously introduced emergencies.

Requirement

Introduce:

Blade/pylon fold system switchology
CH-53 NATOPS brief/CH-53 NATOPS debrief
Maximum performance takeoff
Straight-in approach
Engine restarts during flight
Crosswind landing
Single engine failure (hover and takeoff)
Effects of gross weight on single and/or dual engine performance
Single and/or dual engine failure at altitude
Engine shutdown in-flight
Compressor stall
Engine power loss
Engine post-shutdown fire

Practice:

Cockpit and flight procedures
Start/shutdown checklist
All previously introduced emergencies

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

Prerequisites. CIUT-5901

External Syllabus Support. WST/APT.

CIUT-5903	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce running landings and autorotations. Practice aircraft emergencies, previously introduced flight procedures and normal cockpit procedures.

Requirement

Introduce:

Running takeoff/landing
Wave-off
Single and/or dual engine wave-off/landing

Power recovery autorotation
High angle of bank maneuvering and the effects of variables (angle of bank, power required, descent rate, gross weight, temperature, density altitude, etc.) on the performance of the aircraft
Dual engine failure at altitude
Engine overspeed
Single and/or dual engine failure (hover/takeoff)

Practice:

Aircraft emergencies.
Previously introduced flight procedures.
Normal cockpit procedures.

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

Prerequisites. CIUT-5902

External Syllabus Support. WST/APT.

CIUT-5904	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce gearbox malfunctions. Introduce basic CRM concept. Practice previously introduced emergency and flight procedures.

Requirement

Introduce:

Engine chip detector light.
Control linkage failure.
Power deterioration.
Engine oil pressure high caution light, high oil temperature, engine oil quantity low.
Nose gearbox chip detector light/failure.
Accessory gearbox oil system failure.
Accessory gearbox chip detector light/failure.
Main gearbox oil system failures.
Main gearbox chip locator light/failure.
Power train failures.
Tail rotor drive system failure, tail rotor gearbox or intermediate gearbox failure, and tail rotor or intermediate gearbox chip detector light.

Practice:

Previously introduced emergencies.
Flight procedures.

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

Prerequisites. CIUT-5903

External Syllabus Support. WST/APT

CIUT-5905	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Introduce communication skills IAW CRM techniques. Practice all ground, flight, and aircraft emergency procedures.

Requirement

Introduce:

Obstacle takeoff and approach.
Smoke and fume elimination.
AFCS computer malfunctions/mode failures, total AFCS failure.
BIM/Blade Pressure caution light (in-flight).

Approach and landing with tail rotor control system failure.
Tail rotor tandem servo malfunction.
Fuel filter bypass light.
Hydraulic fire in main rotor pylon.
Use of GPS system.
Sender/receiver responsibilities and overcoming communication barriers. Discuss ICS switchology and techniques, visual and standard terminology.

Practice: Ground, flight, and aircraft emergency procedures.

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

Prerequisites. CIUT-5904

External Syllabus Support. WST/APT.

CIUT-5906	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Conduct Progress Check. Introduce communication skills IAW CRM techniques.

Requirement

Introduce:

Ground resonance procedure.
Vortex Ring State
Pr>Pa.
Dynamic rollover.
Electrical fire.
Alternating/Direct current system failures.
Rotor damper failure.
Lightning strike.
Most conservative response rule, the two-challenge rule, and task saturation with compound emergencies.

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

Prerequisites. CIUT-5905

External Syllabus Support. WST/APT.

CIUT-5907	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Introduce engine failure(s) at altitude, running takeoffs and landings, precision approaches.

Requirement

Discuss:

Engine system/limitations.
Engine overspeed/Nf flex shaft failure.
Compressor stall.
Engine power loss.
Engine high/low oil pressure.
Engine high oil temperature.
Engine chip detector light.
Control linkage failure.
Effects of gross weight on single and/or dual engine performance.
Engine shutdown in flight/fuel siphoning.
Engine restart in flight.
Introduce:
Simulated single and/or dual engine failure at altitude.
Running takeoffs and landings.

Precision approaches to a hover.

Practice:

Cockpit procedures.
Hover/low work.
Previously introduced FAM maneuvers.

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

Prerequisites. CIUT-5906

External Syllabus Support. WST/APT.

CIUT-5908	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Introduce simulated partial/total AFCS failure. Practice FAM and previously introduced simulated emergency procedures.

Requirement

Discuss:

AFCS system/functions.
Inner/outer loop.
AFCS servo functions.
AFCS servo hardover.
Longitudinal bias actuator.
FAS functions.
Trim functions.
Desensitizer failure.
AFCS computer malfunctions/mode failures.
Total AFCS failure.
Ground resonance.

Introduce:

Obstacle takeoff, approach.
Partial/total AFCS failure.
Practice autorotations (Refreshers, Modified Refreshers only)
Practice:
Previously introduced FAM maneuvers.
Simulated emergency procedures.

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

Prerequisites. CIUT-5907

External Syllabus Support. WST/APT.

CIUT-5909	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Practice all FAM maneuvers, and simulated emergency procedures.

Requirement

Discuss:

Transmission system/limitations
Chip detection system
Nose gearbox chip location light
Nose gearbox failure
Accessory gearbox oil system failure
Accessory gearbox chip locator light
Accessory gearbox failure

Main gearbox chip locator light
Main gearbox oil system failure
Loss of main gearbox lubrication
Power train failure
Tail rotor or intermediate gearbox chip detector light
Tail rotor gearbox or intermediate gearbox failure
Tail rotor drive system failure
Pylon unsafe for flight light

Practice:

All FAM maneuvers
Simulated emergency procedures

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

Prerequisites. CIUT-5908

External Syllabus Support. WST/APT.

CIUT-5910	1.5	*	CIUT	D	S	1	WST/APT
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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 V_{MAX})
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
Conditions leading to Vortex Ring State and Pr>Pa
Landing gear system
Landing gear system failure
Bearing Monitor System
Bearing VIB or TEMP DETECT and LIMIT
BMS fault isolation

Practice:

All FAM maneuvers.
Simulated emergency procedures.

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

Prerequisites. CIUT-5909

External Syllabus Support. WST/APT.

CIUT-5911	1.5	*	CIUT	N	S	1	WST/APT
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Goal. Introduce FAM maneuvers at night.

Requirement

Discuss:

- Aircraft lighting systems.
- Electrical failures.
- Electrical power supply system.
- Single and multiple generator failure.
- Single and dual rectifier failure.
- Minimum aircraft equipment required for night flight.

Introduce:

- Normal procedures and maneuvers under conditions of darkness at a lit airfield.
- Night basic airwork, low work, and landings with various light configurations.
- Tip path plane awareness.
- HNVS operation.

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

Prerequisites. CIUT-5910

External Syllabus Support. WST/APT.

CIUT-5912	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce basic instruments, TACAN approaches, and decision making IAW CRM techniques.

Requirement

Introduce:

- Instrument flight checklist.
- Instrument takeoff.
- Level speed change.
- Standard rate timed turns.
- Vertical S-1 pattern.
- Oscar pattern.
- Turn pattern.
- TACAN approach.
- Point-to-point navigation.
- Holding.
- Decision making in the CH-53 IAW CRM techniques.
- Troubleshooting strategies for degraded aircraft systems in IMC.

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

Prerequisites. CIUT-5911

External Syllabus Support. WST/APT

CIUT-5913	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce partial panel flight, VOR/ADF procedures and adaptability/flexibility per CRM techniques.

Requirement

Introduce:

- Partial panel flight
- VOR/ADF approach

Holding
Adaptability/flexibility in the CH-53E per CRM techniques

Discuss:

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

Practice: TACAN procedures.

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

Prerequisites. CIUT-5912

External Syllabus Support. WST/APT.

CIUT-5914	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce ILS/localizer approaches and mission analysis per CRM techniques. Practice aircraft emergency procedures.

Requirement

Introduce:

ILS and localizer approaches.
Mission analysis in the CH-53 per CRM techniques.

Discuss: Problem framing.

Practice:

TACAN and VOR approaches.
Previously introduced emergency procedures.

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

Prerequisites. CIUT-5913

External Syllabus Support. WST/APT.

CIUT-5915	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce unusual attitudes and recovery procedures, PAR, ASR approaches and situational awareness considerations in the CH-53 per CRM techniques. Practice aircraft emergency procedures.

Requirement

Introduce:

Unusual attitudes and recovery procedures.
PAR and ASR approaches.
Situational awareness considerations in the CH-53 per CRM techniques.
Task fixation during an instrument approach with an emergency or degraded system.

Practice: Aircraft emergency procedures.

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

Prerequisites. CIUT-5914

External Syllabus Support. WST/APT.

CIUT-5916	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce radio failure, ATC procedures in IMC conditions and leadership principles per CRM techniques.

Requirement

Introduce:

HF Radio.
IFR departure.
COMM/NAV failure under IMC.
Single and/or dual engine missed approach.
IFR canned route (Flight planning).
Leadership principles in the CH-53E per CRM techniques.
Command authority, crewmember relationships in the cockpit and cabin, and division of tasks.

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

Prerequisites. CIUT-5915

External Syllabus Support. WST/APT

CIUT-5917	2.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce basic instrument, precision, and non-precision procedures.

Requirement

Discuss:

Approach minimums and helicopter-only approaches
BDHI/course indicator switches
ILS/LOC and LOC back course approaches
Instrument checklist
Inadvertent entry into IMC conditions
Lost plane procedures
Lighting strike
Emergency descent
Use/Failure of AFCS functions in IMC conditions

Introduce:

Time-distance checks
ADF procedures
Operation of the transponder modes
VOR procedures
TACAN procedures
Point-to-point navigation
ILS/LOC procedures
PAR procedures

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

Prerequisites. CIUT-5916

External Syllabus Support. WST/APT

CIUT-5918	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Conduct IFR flight to an outlying airfield. Instrument progress check.

Requirement. Plan, file, brief, and fly an IFR flight away from home field.

Discuss: Range performance charts in the CH-53 NATOPS Manual.

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

Prerequisites. CIUT-5917

External Syllabus Support. WST/APT

CIUT-5920	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce use of flight planning software, GPS and HNVS.

Requirement. Utilize flight planning software to develop a route card and load the GPS Mission Data Loader with a minimum of six waypoints.

Discuss: GPS set-up, programming, operation, and use

Introduce: Use of Global Positioning System (GPS) and HNVS operation

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

Prerequisites. CIUTD-5918

External Syllabus Support. WST/APT

CIUT-5921	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce day formation principles.

Requirement

Discuss: Aircraft lighting, closure rate, recovery from unusual attitudes, CRM, and comfort level

Introduce: Section takeoffs, cruise principles, crossovers, and section approaches

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

Prerequisites. CIUT-5920

External Syllabus Support. WST/APT

CIUT-5922	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Practice 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
- Vortex Ring State
- Pr>Pa
- Main and tail rotor clearance factors over sloping or uneven terrain
- LZ considerations

Practice: Precision approaches to confined areas

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

Prerequisite. CIUT-5921

External Syllabus Support. WST/APT

CIUT-5923	2.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce single point and dual point external cargo operations. Introduce communication skills between pilots and aircrew.

Requirement

Introduce:

Single and dual point hook checks
Operational Power Checks
Single Point Performance checks
Weight and Power calculations in the zone
Cargo pickup and release procedures
CRM consideration for external operations
Voice signals/standardized terminology
Emergency Procedures during external operations

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

Prerequisite. CIUT-5922

External Syllabus Support. WST/APT with Aircrew External Trainer if available

CIUT-5924	1.0	*	CIUT	D	S	1	WST/APT
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Goal. Introduce TERF maneuvers. 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:

Operational power checks
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-53 NATOPS, ANTTP 3-22.3-CH53, and Maneuver Description Guide.

Prerequisites. CIUT-5923

External Syllabus Support. WST/APT

CIUT-5925	2.0	*	CIUT	D	S	1	WST/APT
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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-53E NATOPS and Maneuver Description Guide. CIUT is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. CIUT-5900-5924

External Syllabus Support. WST/APT

CIUT-5926	2.0	*	CIUT	D	S	1	WST/APT
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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-53 NATOPS and Maneuver Description Guide. CIUT is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. CIUT-5925

External Syllabus Support. WST/APT

CIUT-5927	2.0	*	CIUT	D	S	1	WST/APT
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Goal. Evaluate systems knowledge of the CH-53 and the capability to perform maneuvers in the Core Skill Introduction phase, including high AOB maneuvers.

Requirements

Practice:

Evaluate systems knowledge of the CH-53 to include external lift systems
Brief and demonstrate proficiency of all aircraft emergency procedures per the CH-53 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-53 NATOPS and Maneuver Description Guide.

Prerequisite. Open and Closed book NATOPS exams; CIUT-5926

External Syllabus Support. WST/APT

CIUT-5931	1.5	*	CIUT	D	S	1	WST/APT
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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-53E NATOPS and Maneuver Description Guide. Instructors shall emphasize the ability to teach using all appropriate references and SOPs, evaluate problems, and apply corrective instruction.

Prerequisites. CIUT-5927

External Syllabus Support. WST/APT

CIUT-5932	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Review all familiarization stage maneuvers at night.

Requirements

Discuss:

CRM
The night unaided environment

Performance Standards. Per CH-53E NATOPS and 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. WST/APT

CIUT-5933	2.0	*	CIUT	D	S	1	WST/APT
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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-53E NATOPS and Maneuver Description Guide.

Prerequisites. CIUT-5932

External Syllabus Support. WST/APT

CIUT-5934	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Review CAL instruction techniques.

Requirements

Discuss:

CRM

Comfort level

Review: All CAL stage maneuvers

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

Prerequisites. CIUT-5933

External Syllabus Support. WST/APT

CIUT-5935	1.5	*	CIUT	D	S	1	WST/APT
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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-53E NATOPS and Maneuver Description Guide.

Prerequisites. CIUT-5934

External Syllabus Support. WST/APT

CIUT-5936	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Review external operation instructional techniques.

Requirements

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-53E NATOPS and 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. WST/APT with external aircrew trainer, if available

CIUT-5937	1.5	*	CIUT	D	S	1	WST/APT
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Goal. Flight instructor standardization check.

Requirements

Discuss:

- CRM
- CH-53E limitations
- Course Rules
- Maneuver Description Guide
- Instruction techniques

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

Prerequisites. Open and Closed Book NATOPS. CIUT-5936

External Syllabus Support. WST/APT

2.13 REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS (RQD) PHASE (6000)

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 CH-53 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-6001. Pilots that required Core Skill Introduction Refresher shall complete those flight leadership events designated as R POI events and be redesignated at the discretion of the MAG Commanding Officer. Refresher pilots that were previous Assault Flight Leaders (AFL) 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 AFL and AMC can occur at the discretion of the MAG commanding officer. Flight Leadership proficiency shall be tracked in M-SHARP, 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)	2.13.1	2-121
CREW RESOURCE MANAGEMENT (CRM)	2.13.2	2-122
INSTRUMENT EVALUATION (INST)	2.13.3	2-123
HELICOPTER AIRCRAFT COMMANDER (HAC)	2.13.4	2-124
SECTION LEADER (SL)	2.13.5	2-126
DIVISION LEADER (DL)	2.13.6	2-129
ASSAULT FLIGHT LEADER (AFL)	2.13.7	2-132
AIR MISSION COMMANDER (AMC)	2.13.8	2-134
FUNCTIONAL CHECK PILOT (FCP)	2.13.9	2-135

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 and IAW paragraph 206 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 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.

2000-6000 classes are located at the MAWTS-1 NIPR website:

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

SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under courseware:

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

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

2.13.1 CH-53 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-53 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/AO (as required).

Academic Training. Open, closed book and oral evaluation IAW CNAF 3710.7 and the CH-53 NATOPS.

NATOPS Overview.

NATOPS POI STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
NATOPS-6000	3.0	365	B,R,M		G		NATOPS OPEN BOOK EXAM
NATOPS-6001	1.0	365	B,R,M		G		NATOPS CLOSED BOOK EXAM
NATOPS-6002	2.0	365	B,R,M		G		NATOPS ORAL EXAM
NATOPS-6004	1.0	30	B,R,M		G		MONTHLY EP EXAM
NATOPS-6100	1.5	365	B,R,M	(N)	S/A	1	NATOPS EVALUATION

NATOPS-6000	3.0	365	Open Book NATOPS Exam
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Goal. Open book written examination to evaluate the airman's NATOPS knowledge IAW 3710.

Performance Standard. IAW CNAF 3710.

NATOPS-6001 1.0 365 Closed Book NATOPS Exam

Goal. Closed book written examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53 NATOPS.

Performance Standard. IAW CNAF 3710 and CH-53 NATOPS.

Prerequisite. NATOPS-6000

NATOPS-6002	2.0	365	Oral NATOPS Exam
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Goal. Oral examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53 NATOPS.

Performance Standard. IAW CNAF 3710 and CH-53 NATOPS.

Prerequisite. NATOPS-6001

NATOPS-6004 1.0 30 Monthly EP Exam

Goal. Monthly NATOPS Emergency Procedure Examination to evaluate the airman's Knowledge of Emergency Procedures.

Performance Standard. IAW CNAF 3710 and CH-53 NATOPS.

NATOPS-6100 1.5 365 (N) S/A 1 WST/APT/CH-53E

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-53 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. WST/APT as required

2.13.2 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.

CRM Overview.

CREW RESOURCE MANAGEMENT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
CRM-6003	3.0	365	B,R,M		G		CRM CLASS
CRM-6101	1.5	365	B,R,M	(N)	S/A	1+	PRACTICE CRM PRINCIPLES

CRM-6003 3.0 365 CH-53E CRM Class

Goal. Conduct annual CH-53 CRM Ground Training IAW CH-53 NATOPS, CNAF 3710.7 and CNAFINST 1542.7.

Performance Standards. Per CH-53 NATOPS, CNAF 3710.7 and CNAFINST 1542.7.

CRM-6101 1.5 365 (N) S/A 1 WST/APT/CH-53E

Goal. Practice/review CRM principles presented in the CH-53 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-53 NATOPS, CNAF 3710.7, CNAFINST 1542.7.

Prerequisite. CRM-6003

2.13.3 CH-53 Instrument Evaluation

Purpose. To evaluate the airman's knowledge of instrument procedures and aircraft instrument systems.

General. Instrument Instructors shall conduct the Instrument evaluation in accordance with CNAF 3710.7 series and other applicable directives, instructions, and orders.

The Instrument Instructor 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 Overview.

INSTRUMENT EVALUATION STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
INST-6005	4.0	365	B,R,M		G		INSTRUMENT GROUND SCHOOL
INST-6006	1.0	365	B,R,M		G		WRITTEN INSTRUMENT EXAM
INST-6102	1.5	365	B,R,M	(N)	S/A	1	INSTRUMENT EVALUATION

INST-6005 4.0 365 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 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 (N) S/A 1 WST/APT/CH-53E

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.

Requirements. As directed in the CH-53 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. WST/APT as required

2.13.4 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-53 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 recommend by Squadron Standardization Board. PUI must have 500 total hours prior to designation.

HAC Overview.

HELICOPTER AIRCRAFT COMMANDER STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
HAC-6120	1.5	*	B	D	A/S	1+	HAC REVIEW
HAC-6121	1.5	*	B	NS	A/S	1+	NS HAC REVIEW
HAC-6122	2.0	*	B,R	(N)	A	1+	DAY INTO NIGHT HAC EVALUATION

HAC-6120 1.5 * B D A/S 1 CH-53E/WST/APT

Goal. Conduct day HAC review.

Requirements. As directed in the CH-53 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
OPCs / SPPCs
Hook/pendant preflight
External precision hover
External pick-up
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-53 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.

Range Requirements. CAL/MAL site.

HAC-6121	1.5	*	B	NS	A/S	1	CH-53E/WST/APT
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Goal. Conduct NS HAC review.

Requirements. Same as HAC-6120 with emphasis on NS planning and considerations.

Evaluate:

- Low work
- Pattern work
- Normal/precision hover
- No hover landings
- OPCs / SPPCs
- NS formation
- NS landings
- Hook/pendant preflight
- External precision hover
- External pick-up
- 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-53 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

Range Requirements. CAL/MAL site

HAC-6122	2.0	*	B,R	(N)	A	1	CH-53E
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Goal. Conduct day into night HAC check.

Requirements. As directed in the CH-53 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
- OPCs / SPPCs
- NS formation
- NS landings
- Hook/pendant preflight
- External precision hover
- External pick-up
- 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-53 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. BIP-5110, HAC-6120 and HAC-6121, NATOPS-6001

Ordnance. As required.

External Syllabus Support. As required.

2.13.5 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/AO

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-8630 & ACPM-8660

Flight: HAC-6122

Designation/Qualification: HAC

SL Overview.

SECTION LEADER STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SL-6200	1.5	*	B	(NS)	A/S	2	DAY OR NIGHT CORE SKILL SL REVIEW
SL-6201	1.5	*	B	(NS)	A/S	2	MCT BASED TACTICAL SCENARIO
SL-6202	1.5	*	B	(NS)	A/S	2	DAY OR NIGHT CORE SKILL SL REVIEW
SL-6203	1.5	*	B,R	NS	A	2	NIGHT SL EVAL W FLSE

SL-6200 1.5 * B (NS) A/S 2 AsltSpt A/C /WST/APT TEN+

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 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-8630, ACPM-8660, Designated HAC with a minimum of three flights as a HAC in a wingman position

External Syllabus Support. WST/APT TEN+ (as required)

SL-6201	1.5	*	B	(NS)	A/S	2	AsltSpt A/C /WST/APT TEN+
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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 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-8630, ACPM-8660, Designated HAC with a minimum of three flights as a HAC in a wingman position.

External Syllabus Support. Escort FW/RW aircraft optional, WST/APT TEN+ (as required)

SL-6202	1.5	*	B	(NS)	A/S	2	AsltSpt A/C /WST/APT TEN+
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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 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 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-8630, ACPM-8660; Designated HAC with a minimum of three flights as a HAC in a wingman position.

External Syllabus Support. WST/APT TEN+ (as required).

SL-6203	1.5	*	B,R	NS	A	2	AsltSpt Aircraft
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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 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

2.13.6 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; 1 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 AFL 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 MAG 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/AO

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-8640 & 8641

Flight: SL-6203 and three flights as a Section Leader

Designation/Qualification: Section Lead

DIV Leader Overview.

DIVISION LEADER STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
SL-6300	1.5	*	B	(NS)	A/S	3+	DAY OR NIGHT CORE SKILL DL REVIEW
SL-6301	1.5	*	B	(NS)	A/S	3+	MCT BASED TACTICAL SCENARIO
SL-6302	1.5	*	B,R	(NS)	A	3+	DL EVALUATION W FLSE
DL-6300	1.5	*	B	(NS)	A/S	3+	AsltSpt A/C /WST/APT 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 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-8640, ACPM-8641, Designated SL with a minimum of three flights as a Section Leader

External Syllabus Support. WST/APT TEN+ (as required)

DL-6301	1.5	*	B	(NS)	A/S	3+	AsltSpt A/C /WST/APT TEN+
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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, ANTPP 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 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-8640, ACPM-8641
Designated SL
Minimum of three flights as a Section Leader.

External Syllabus Support. WST/APT TEN+ (as required). Escort FW/RW aircraft optional.

DL-6302	1.5	*	B,R	(NS)	A	3+	AsltSpt Aircraft
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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, ASTAC SOP, 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 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

2.13.7 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 MAG 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/AO.

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: ACAD-6010, ACPM-8620

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

FL Overview.

DIVISION LEADER STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
FL-6400	1.5	*	B	(NS)	A	5+	FL EVALUATION W FLSE

FL-6400 1.5 * B (NS) A 5+ AsltSpt Aircraft

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 ANTPP 3-22.3-CH53

Complies with Wing, MAG, and squadron SOPs.

Performance Standards

Plan and brief a MCT based tactical mission IAW ASTACSOP and ANTPP 3-22.3-CH-53.

TERF events shall navigate a route at or below 200' AGL 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. ACAD-6010, ACPM-8620, 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.

2.13.8 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 MAG 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 6 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 AFL 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-6011
Flight: FL-6400
Designation/Qualification: Flight Lead

AMC Overview.

AIR MISSION COMMANDER STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
AMC-6500	1.5	*	B	(NS)	A/G	5+	AMC EVALUATION W FLSE

AMC-6500 1.5 * B (NS) A/G 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-6011

Ordinance. 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).

2.13.9 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-53E FRS, as the model manager, will manage the FCP instructor standardization program. The FRS will maintain the FCP Evaluator (FCPE) and the FCP Instructor (FCPI) syllabus. All squadron FCPIs shall receive evaluations from the FRS FCPE. The FCPE shall be a highly qualified FCP resident to the FRS. Designation as the FCPE shall be in writing by the NATOPS Model Manager. Squadron FCPIs will administer squadron level Assistant FCPI (AFCPI) and FCP evaluations. An FCPI shall be a highly qualified FCP whose primary duty should be administering the FCP syllabus and evaluation program within a squadron or unit. FCPIs shall receive initial and annual FCP standardization evaluations from the FCPE and be designated in writing by their respective commanding officer. 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 squadron FCPIs or AFCPIs.

Crew Requirements. P/P/CC.

Prerequisites. A prospective Functional Check Pilot, nominated by their squadron's Standardization Board, shall be a designated HAC with a minimum of 25 aircraft commander hours prior to starting the syllabus. 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-53 NATOPS, 4790 Naval Aviation Maintenance Program, MIMS, and local SOP's that pertain to FCF operations. The FCP required readings, lectures, and associated literature for ACAD-6012 are located on the FRS FCP website and shall be administered by FCPIs or AFCPIs. ACAD- 6013 can be given as a resident seminar by the FCPE or by using the computer-based training module located on the FRS FCP website.

FCP Overview.

FUNCTIONAL CHECK PILOT STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
ACAD-6012	6.0	*	B,R		G		FCF READINGS
ACAD-6013	16.0	*	B,R		G		FCP SEMINAR (RESIDENT OR CBT)
FCP-6600	3.0	*	B,R		G		FCP OPEN BOOK EXAM
FCP-6610	1.5	*	B	D	S/A	1	INTRO AFCS
FCP-6611	1.5	*	B	D	A	1	REVIEW AFCS
FCP-6612	1.5	*	B	D	S/A	1	INTRO MECH FLIGHT CONTROL
FCP-6613	1.5	*	B	D	A	1	REV MECH FLIGHT CONTROL
FCP-6614	1.5	*	B	D	S/A	1	INTRO ENGINES
FCP-6615	1.5	*	B	D	A	1	REV ENGINES
FCP-6616	1.5	*	B,R	D	S/A	1	INTRO FULL FCF CARD
FCP-6617	1.5	*	B,R	D	A/S	1	FCP EVAL
FCP-6618	1.5	365	B,R	D	S/A	1	FCPI/AFCPI EVAL

FCP-6600 3.0 * B,R FCP Open Book Exam

Goal. Open book written examination to evaluate the FCPs knowledge.

Performance Standard. IAW CH-53 NATOPS, 4790 Naval Aviation Maintenance Program, AND MIMS. Test should be administered through the FRS FCP website.

FCP-6610	1.5	*	B	D	S/A	1	WST/APT/CH-53E
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Goal. Introduce AFCS checks associated with Functional Check Flight

Requirements

Discuss:

- Maintenance actions requiring AFCS checks
- QA brief/debrief
- AFCS check procedures

Introduce:

- AFCS check 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-53 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, ACAD-6012, and ACAD-6013.

FCP-6611	1.5	*	B	D	A	1	CH-53E
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Goal. Review AFCS checks associated with Functional Check Flight.

Requirements

Discuss:

- Conditions requiring an AFCS checks.
- AFCS check procedures
- QA brief/debrief.

Practice:

- AFCS check procedures
- QA brief/debrief.

Performance Standards. FCPUI will demonstrate the ability to conduct AFCS checks associated with a 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-6610

FCP-6612	1.5	*	B	D	S/A	1	WST/APT/CH-53E
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Goal. Introduce Mechanical Flight Control checks associated with Functional Check Flight

Requirements

Discuss:

- Conditions requiring mechanical flight control checks
- Mechanical flight control check procedures
- QA brief/debrief

Introduce:

- Mechanical flight control check 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-53 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, ACAD-6012, and ACAD-6013.

FCP-6613 1.5 * B D A 1 CH-53E

Goal. Evaluate Mechanical Flight Control checks associated with Functional Check Flight.

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 Mechanical Flight Control checks associated with a 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

FCP-6614 1.5 * B D S/A 1 WST/APT/CH-53E

Goal. Introduce engine performance checks associated with Functional Check Flight

Requirements

Discuss:

Conditions requiring engine performance checks
Engine performance check procedures.
QA brief/debrief.

Introduce:

Engine performance check 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-53 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, ACAD-6012, and ACAD-6013

FCP-6615 1.5 * B D A 1 CH-53E

Goal. Evaluate engine performance checks associated with Functional Check Flight.

Requirements:

Discuss:

Conditions requiring engine performance checks
Engine performance check procedures
QA brief/debrief

Practice:

Engine performance check procedures
QA brief/debrief

Performance Standards. FCPUI will demonstrate the ability to conduct engine performance checks associated with a 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-6614

FCP-6616 1.5 * B,R D S/A 1 WST/APT/CH-53E

Goal. Introduce test card procedures not associated with another FCF profile.

Requirements

Discuss.

Conditions requiring a full test card
Full test card procedures
IMDS testing procedures
QA brief/debrief

Introduce.

Full test card procedures
IMDS 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-53 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. FCP-6610, FCP-6612, and FCP-6614

FCP-6617 1.5 * B,R D A/S 1 CH-53E/WST/APT

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-53 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. 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-6600, FCP-6611, FCP-6613, FCP-6615, and FCP-6616

FCP-6618 1.5 365 B,R D S/A 1 WST/APT/CH-53E

Goal. Evaluate the ability to instruct functional checkflights in accordance with CH-53 NATOPS Flight Manual, CNAF M-3710.7, 4790 Naval Aviation Maintenance Program, MIMS, required readings, FCP seminar and local SOPs.

Requirements. The IUT will demonstrate the ability to instruct and evaluate a full-systems functional check flight to a prospective AFCPI/FCP. IUT will demonstrate the ability lead discussions covering any of the items previously listed in the FCP syllabus with emphasis on the execution of current, standard functional check flight procedures.

Discuss. Any previously discussed item in the FCP syllabus and instruction techniques.

Review. Full test card procedures.

Perform a full test card functional check

Flight evaluation/instruction of full test card procedures

Performance Standards. The IUT will be evaluated on the ability to instruct and evaluate a prospective AFCPI/FCP through a full-systems functional check flight. IUT must be able to instruct and evaluate a prospective AFCPI/FCP's ability to perform current standard functional check flight procedures. IUTs will be evaluated on their ability to instruct all stages of the evolution from QA briefing through QA debriefing and work order initiation. IUT will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management, aircrew coordination and the ability to evaluate prospective AFCPI/FCPs based on the same criteria.

Instructor: FCPE / FCPI (for unit-level AFCPI evaluations)

Prerequisites. ACAD-6013, FCP-6617, designated an FCP, and recommended by Standardization Board.

2.14 MISSION ESSENTIAL TASK (MET) PHASE (7000)

2.14.1 Purpose

To assess CMMR representative crews during the execution of the unit's specified METs in order to ensure standardization and combat readiness.

To fulfill the requirements of a Marine Corps Combat Readiness Evaluation (MCCRE) as specified in MCO 3502.1, Marine Corps Combat Readiness Evaluation.

Prerequisite. Aircrew assessed during this phase shall meet the requirements of a Force Generation Order. The crews should be comprised of deploying personnel to the maximum extent practical.

Admin Notes. The proficiency period for conducting elements of the 7000 phase are:

No less than once every 2 years for active components

No less than once every 5 years for reserve components

Units not scheduled to be assessed at a service level training venue (i.e. ITX, MTNEX, TALONEX) shall conduct elements of the 7000 level phase as a minimum requirement for a unit to deploy.

The MAW Flight Leadership Standardization and Evaluation (FLSE) cadre is the resource used to assess Type/ Model/ Series units for MET capability in accordance with the MCCRE Order. The units assessor will be designated at the Wing level of the unit to be assessed.

Events in this Phase normally require a Force Generation Order prior to commencing the 7000 Stage. Once a unit deploys, is removed from the Force Generation Order, or completes the required 7000-Stage, 7000 Phase currency no longer needs to be maintained. Multiple Events may be accomplished during the same sortie. Results of the MCCRE assessment shall be formatted per Appendix D, 3500.14D and submitted to CG, MCCDC (via AMHS message attachment to CG TECOM MTESD) no later than 45 days after MCCRE completion.

2.14.2 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)	2.14.3	2-141

MISSION ESSENTIAL TASKS PHASE		
AERIAL DELIVERY (AD)	2.14.3	2-142
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)	2.14.3	2-142
AIR EVACUATION (AE)	2.14.3	2-142
RAPID INSERTION/ EXTRACTION (RIE)	2.14.3	2-143
AVIATION DELIVERED GROUND REFUELING (ADGR)	2.14.3	2-143
EXPEDITIONARY SEA-BASED OPERATIONS (SEA)	2.14.3	2-143

2.14.3 MISSION ESSENTIAL TASK (MET) STAGE

Purpose. To assess squadrons or detachments executing community specific MET(s) or MET preparatory Events.

General

Prerequisite. If an event requires prerequisites in addition to those listed for the MET Phase, they will be covered in the individual event.

Crew Requirements. The participants required for the 7000 Phase are the evaluated unit and the assessor. The crew requirement is based on the specific event. The assessment shall be conducted from a crew position of the assessor's T/M/S. At the discretion of the assessor, observation of mission planning, briefing/debriefing, and execution from an OP may satisfy a portion of the assessment.

Respectively, the primary, alternate, and tertiary assessors shall be a MATSS representative, WTI (FLSE) from within the parent command designated by the owning Wing, or MAWTS-1 representative. The number of crews evaluated will be based on a percentage required to deploy per the Force Generation Order.

MET Overview.

MISSION ESSENTIAL TASK STAGE							
EVENT	TIME	REFLY	POI	COND	DEVICE	NUM	DESCRIPTION
MET-7001	1.5	730	B,R,M,E	(NS)	A	2+	COMBAT ASSAULT TRANS
MET-7002	1.5	730	B,R,M,E	(NS)	A	2+	AERIAL DELIVERY
MET-7003	1.5	730	B,R,M,E	(NS)	A	2+	TRAP
MET-7004	1.5	730	B,R,M,E	(NS)	A	2+	AIR EVACUATION
MET-7005	1.5	730	B,R,M,E	(NS)	A	2+	RAPID INSERTION/EXTRACTION
MET-7006	1.5	730	B,R,M,E	(NS)	A	2+	AVIATION DELIVERED GROUND REFUELING
MET-7007	1.5	730	B,R,M,E	(NS)	A	2+	SEA BASED TACTICS

MET-7001 1.5 730 B,R,M (NS) A 2+ CH-53E

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-3240

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.

MET-7002 1.5 730 B,R,M (NS) A 2+ CH-53E

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, tiltrotor 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)

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 sec.

Instructor: MATSS representative, WTI (FLSE) designated by Wing, or MAWTS-1 representative

Prerequisites. AD-3340

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-53E

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 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 complement 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-3440

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-53E

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 3-20, MCTP 3-01B, MCTP 3-10F, MCTP 3-20E, 3-25, MCRP 3-20.3, 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-3540

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-53E

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 3-01B.1)

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 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.

MET-7006 1.5 730 B,R,M (NS) A 2+ CH-53E

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- 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-53 to operate as a tactical ground refueler enhances MAGTF operations. (ANTTP 3-22.3-KC-130)

Performance Standard. 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.

MET-7007 1.5 730 B,R,M (NS) A 2+ CH-53E

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 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.

2.15 AVIATION CAREER PROGRESSION MODEL (ACPM) 8000 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
- Sea based 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 MCALMS 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 212.

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 refly intervals.

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

ACPM TO HMH T&R MATRIX				
STAGE	EVENT NUMBER	CLASS	ACPM DESCRIPTION	PREREQUISITE TO (PHASE/STAGE/EVENT)
ACPM	8200	(U)	MACCS AGENCIES, FUNCTIONS AND CONTROL OF AIRCRAFT AND MISSILES	2000 PHASE

ACPM TO HMHT & R MATRIX				
STAGE	EVENT NUMBER	CLASS	ACPM DESCRIPTION	PREREQUISITE TO (PHASE/STAGE/EVENT)
ACPM	8201	(U)	MWCS BRIEF	2000 PHASE
ACPM	8202	(U)	ACA AND AIRSPACE	2000 PHASE
ACPM	8210	(U)	AVIATION GROUND SUPPORT	2000 PHASE
ACPM	8230	(U)	ACE BATTLESTAFF	2000 PHASE
ACPM	8231	(U)	BATTLE COMMAND DISPLAY	2000 PHASE
ACPM	8240	(U)	SIX FUNCTIONS OF MARINE AVIATION	2000 PHASE
ACPM	8241	(U)	JTAR/ASR INTRODUCTION AND PRACTICAL APPLICATION CLASS	2000 PHASE
ACPM	8242	(U)	SITE COMMAND PRIMER	2000 PHASE
ACPM	8250	(U)	THEATER AIR GROUND SYSTEM (TAGS)	2000 PHASE
ACPM	8300	(U)	AIR DEFENSE	2000 PHASE
ACPM	8310	(U)	FORWARD ARMING AND REFUELING POINT (FARP) OPERATIONS	2000 PHASE
ACPM	8311	(U)	MARINE CORPS TACTICAL FUEL SYSTEMS	2000 PHASE
ACPM	8320	(U)	JOINT STRUCTURE & JOINT AIR OPERATIONS	CAT-3240
ACPM	8321	(U)	JOINT AIR TASKING CYCLE PHASE 1: STRATEGY DEVELOPMENT	AD-3340
ACPM	8322	(U)	JOINT AIR TASKING CYCLE PHASE 2: TARGET DEVELOPMENT	AD-3340
ACPM	8323	(U)	JOINT AIR TASKING CYCLE PHASE 3: WEAPONING AND ALLOCATION	AD-3340
ACPM	8324	(U)	JOINT AIR TASKING CYCLE PHASE 4: JOINT ATO PRODUCTION	AD-3340
ACPM	8325	(U)	JOINT AIR TASKING CYCLE PHASE 5:	AD-3340
ACPM	8326	(U)	JOINT AIR TASKING CYCLE PHASE 6: COMBAT ASSESMENT	AD-3340
ACPM	8340	(U)	INTEGRATING FIRES AND AIRSPACE WITHIN THE MAGTF	TRAP-3440
ACPM	8350	(U)	PHASING CONTROL ASHORE	AE-3540
ACPM	8351	(U)	TACRON ORGANIZATIONS AND FUNCTIONS	AE-3540
ACPM	8630	(U)	TACTICAL AIR COMMAND CENTER (TACC)	SL STAGE
ACPM	8660	(U)	JOINT OPS INTRO	SL STAGE
ACPM	8640	(U)	JOINT DATA NETWORK	DL STAGE
ACPM	8641	(U)	MAGTF THEATER	DL STAGE
ACPM	8620	(U)	ESG/CSG INTEGRATION	FL-6400

2.16 T&R SYLLABUS MATRIX (1000 & 5000 PHASE)

CH-53E T&R MATRIX (1000 & 5000 PHASE)																			
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	MR	U	#	ACAD	#	SIM	#	FLT	CON	DEVIC E	#	REFLY	PREREQUISITE	EVENT CONV
COMPUTER BASED TRAINING (CBT), ACADEMICS (ACAD), & LAB (LAB) STAGE																			
ACAD	CBT	0001	INTRO TO THE CH-53	X	X	X	X		1.0						G		*		0001
	CBT	0002	THE AUXILLARY POWER PLANT	X	X	X	X		1.0						G		*	0001	0002
	CBT	0003	ENGINES	X	X	X	X		2.5						G		*	0001	0003
	CBT	0004	THE ELECTRICAL SYSTEM	X	X	X	X		2.0						G		*	0001	0004
	CBT	0005	HYDRAULIC SYSTEM	X	X	X	X		2.0						G		*	0001	0005
	CBT	0006	BLADE/PYLON FOLD & ROTOR BRAKE SYSTEM	X	X	X	X		1.5						G		*	0005	0006
	CBT	0007	LANDING GEAR & WHEEL BRAKE SYSTEM	X	X	X	X		1.5						G		*	0005	0007
	CBT	0008	FUEL SYSTEM	X	X	X	X		1.5						G		*	0001	0008
	CBT	0009	DRIVE TRAIN	X	X	X	X		2.5						G		*	0001	0009
	CBT	0010	CHIP DETECTING SYSTEM	X	X	X	X		1.0						G		*	0003	0010
	CBT	0011	ROTOR SYSTEM	X	X	X	X		1.0						G		*	0001	0011
	CBT	0012	FLIGHT CONTROL SYSTEM	X	X	X	X		3.0						G		*	0005	0012
	CBT	0013	AFCS	X	X	X	X		2.0						G		*	0005,0012	0013
	CBT	0014	MISCELLANEOUS SYSTEMS	X	X	X	X		3.0						G		*	0001	0014
	CBT	0015	COMM NAV SYSTEMS	X	X	X	X		2.0						G		*	0001	0015
	CBT	0016	PREFLIGHT PLANNING & PROC	X	X	X	X		2.0						G		*	0001	0016
	CBT	0017	ASE	X	X	X	X		2.5						G		*	0001	0017
	CBT	0018	INTRO TO FLIGHT PHASE	X	X	X	X		3.0						G		*	0101-0111	0018
	CBT	0019	NIGHT FLIGHT	X	X	X	X		1.5						G		*	0018	0019
	CBT	0020	INST FLIGHT & NAV	X	X	X	X		2.5						G		*	0018	0020
	CBT	0021	VFR NAV, GPS, & HNVS	X	X	X	X		2.5						G		*	0018	0021
	CBT	0022	FORM	X	X	X	X		1.0						G		*	0018	0022
	CBT	0023	CALs	X	X	X	X		1.0						G		*	0018	0023
	CBT	0024	EXT OPS	X	X	X	X		2.0						G		*	0018	0024
	ACAD	0101	THE AUXILIARY POWER PLANT	X	X	X	X		3.0						G		*	0002	0101
	ACAD	0102	ENGINES	X	X	X	X		3.0						G		*	0003	0102
	ACAD	0103	ELECTRICAL SYSTEMS	X	X	X	X		3.0						G		*	0004	0103
	ACAD	0104	HYDRAULIC SYSTEM	X	X	X	X		3.0						G		*	0005-0007	0104
	ACAD	0105	FUEL SYSTEM	X	X	X	X		2.0						G		*	0008	0105
	ACAD	0106	DRIVE TRAIN	X	X	X	X		2.0						G		*	0009-0010	0106
	ACAD	0107	ROTOR SYSTEM	X	X	X	X		2.0						G		*	0011	0107
	ACAD	0108	FLIGHT CONTROL SYSTEM	X	X	X	X		3.0						G		*	0012	0108
	ACAD	0109	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)	X	X	X	X		2.0						G		*	0013	0109
	ACAD	0110	COMMUNICATION AND NAVIGATION SYSTEMS	X	X	X	X		2.5						G		*	0014-0015	0110

CH-53E T&R MATRIX (1000 & 5000 PHASE)																			
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	MR	U	#	ACAD	#	SIM	#	FLT	CON	DEVIC E	#	REFLY	PREREQUISITE	EVENT CONV
	ACAD	0111	CREW RESOURCE MANAGEMENT (CRM) INITIAL	X	X	X	X		2.5						G		*		0111
	ACAD`	0112	INTRODUCTION TO TACTICS	X	X	X	X		2.0						G		*	0017,0110	0112
	LAB	1000	APP/ ENGINE	X	X	X	X		2.0			1	0.0		G		*	0101-0102	1000
	LAB	1001	FUEL SYSTEM	X	X	X	X		1.0			1	0.0		G		*	0105	1001
	LAB	1002	DRIVE TRAIN AND ROTOR SYSTEMS	X	X	X	X		2.0			1	0.0		G		*	0106-0107	1002
	LAB	1003	FLIGHT CONTROL SYSTEM	X	X	X	X		1.0			1	0.0		G		*	0108	1003
	LAB	1004	MISSION PLANNING	X	X	X	X		7.0			1	0.0		G		*	0101-0111	1004
	LAB	1005	PREFLIGHT INSPECTION INTRO	X	X	X	X		2.0			1	0.0		G		*	0101-0111	1005
	LAB	1006	PREFLIGHT INSPECTION PRACTICE	X	X	X	X		2.0			1	0.0		G		*	1005	1006
LAB	1007	REVIEW PREFLIGHT INSPECTION	X	X	X	X		2.0			1	0.0		G		*	1006	1007	
TOTAL CBT, ACAD, & LAB STAGE								44	94.5	0	0.0	8	0.0						
FAMILIARIZATION (FAM) STAGE																			
FAM	SFAM	1100	INTRO COCKPIT PROC	X	X	X					1.0			D	S	1	*	0017	1100
	SFAM	1101	INTRO A/C EMER	X							1.0			D	S	1	*	0018,1100	1101
	SFAM	1102	INTRO ENGINE MAL	X							1.0			D	S	1	*	1101	1102
	SFAM	1103	INTRO RUNNING LANDINGS & AUTOS	X							1.0			D	S	1	*	1102	1103
	SFAM	1104	INTRO GEARBOX MAL	X							1.0			D	S	1	*	1103	1104
	SFAM	1105	INTO CRM SKILLS	X							1.5			D	S	1	*	1104	1105
	SFAM	1106	PROGRESS CHECK	X	X	X					1.0			D	S	1	*	1105	1106
	SFAM	1107	NS ADAPTATION	X							1.0			NS	S	1	*	0019,1106	1107
	FAM	1110	INTRO COCKPIT & FLIGHT PROCEDURES	X									1.5	D	A	1	*	1002,1106	1110
	FAM	1111	INTRO PRECISION HOVER/LOW WORK	X									1.5	D	A	1	*	1110	1111
	FAM	1112	INTRO ENG FAILURES, RUNNING LANDINGS	X									1.5	D	A	1	*	1111	1112
	FAM	1113	INTRO NO HOVER LANDINGS	X									1.5	D	A	1	*	1112	1113
	FAM	1114	INTRO PARTIAL/TOTAL AFCS FAILURE	X	X	X							1.5	D	A	1	*	1113	1114
	FAM	1115	INTRO HIGH AOB MANEUVERS & AUTOS	X									1.5	D	A	1	*	1114	1115
	FAM	1116	PRACTICE ALL FAMS & EPS	X									1.5	D	A	1	*	1115	1116
	FAM	1117	PRACTICE ALL FAMS & EPS	X									1.5	D	A	1	*	1116	1117
	FAM	1118	REVIEW ALL FAMS & EPS	X	X	X							1.5	D	A	1	*	1117	1118
	FAM	1119	PROGRESS CHECK	X	X	X							1.5	D	A	1	*	1118	1119
	FAM	1201	INTRO NS LOW AND PATTERN WORK	X									1.5	NS	A	1	*	1107,1600	1201

CH-53E T&R MATRIX (1000 & 5000 PHASE)																			
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	MR	CI	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	EVENT CONV
	FAM	1202	PRACTICE NS LOW AND PATTERN WORK	X									1.5	NS	A	1	*	1201	1202
TOTAL FAM STAGE								0	0.0	8	8.5	12	18.0						
INSTRUMENT (INST) STAGE																			
INST	SINST	1300	INTRO BASIC INSTRUMENTS	X							1.0			D	S	1	*	0020	1300
	SINST	1301	INTRO PARTIAL PANEL	X	X						1.0			D	S	1	*	1300	1301
	SINST	1302	INTRO ILS/LOCALIZER	X	X						1.0			D	S	1	*	1301	1302
	SINST	1303	INTRO UNUSUAL ATTITUDES	X	X						1.0			D	S	1	*	1302	1303
	SINST	1304	INTRO IFR LOST COMM	X							1.0			D	S	1	*	1303	1304
	INST	1305	INTRO BASIC INSTRUMENTS	X	X									2.0	(N)	A	1	*	1304
INST	1306	INSTRUMENT PROGRESS CHECK	X	X	X								1.5	(N)	A	1	*	1305	1306
TOTAL INST STAGE								0	0.0	5	5.0	2	3.5						
NAVIGATION (NAV) STAGE																			
NAV	SNAV	1400	INTRO FLIGHT PLANNING SOFTWARE,GPS,HNVs	X							1.0			D	S	1	*	0021	1400
TOTAL NAV STAGE								0	0.0	1	1.0	0	0.0						
FORMATION (FORM) STAGE																			
FORM	SFORM	1500	INTRO DAY FORM	X	X	X					1.0			D	S	1	*	0022	1500
	FORM	1501	INTRO PARADE, CRUISE AND SEC LANDING	X	X	X							2.0	D	A	2	*	1400,1500	1501
	FORM	1502	INTRO NS FORM	X									2.0	NS	A	2	*	1202,1501,1602,1600	1502
TOTAL FORM STAGE								0	0.0	1	1.0	2	4.0						
CONFINED AREA LANDING (CAL)STAGE																			
CAL	SCAL	1600	INTRO NS CALS	X							1.0			NS	S	1	*	0019,1107	1600
	CAL	1601	DAY CALS	X									1.5	D	A	1	*	1111	1601
	CAL	1602	INTRO SEC CALS	X	X	X							1.5	D	A	2	*	1501,1601	1602
	CAL	1603	INTRO NS CALS	X	X	X							1.5	NS	A	1	*	1202,1600,1601	1603
	CAL	1604	INTRO NS SECTION CALS	X									1.5	NS	A	2	*	1502,1603,1602	1604
TOTAL CAL STAGE								0	0.0	1	1.0	4	6.0						
EXTERNAL (EXT) STAGE																			
EXT	SEXT	1700	INTRO SINGLE AND DUAL POINTS	X	X	X					2.0			D	S	1	*	0024	1700
	EXT	1701	INTRO SINGLE POINT	X	X	X							1.5	D	A	1	*	1700,1601	1701
	EXT	1702	INTRO NS SINGLE POINT	X	X								1.5	NS	A	1	*	1603,1701	1702
	EXT	1703	INTRO DUAL POINT	X	X	X							1.5	D	A	1	*	1701	1703
	EXT	1704	INTRO NS DUAL POINT	X	X								1.5	NS	A	1	*	1702,1703	1704
TOTAL EXT STAGE								0	0.0	1	2.0	4	6.0						
TERRAIN FLIGHT (TERF) STAGE																			
TERF	STERF	1800	INTRO TERF MANEUVERS	X	X						1.0			D	S	1	*	2011	1800
	TERF	1801	INTRO TERF	X	X								1.5	D	A	1	*	1601,1800	1801

CH-53E T&R MATRIX (1000 & 5000 PHASE)																			
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	MR	CI	#	ACAD	#	SIM	#	FLT	CON	DEVIC E	#	REFLY	PREREQUISITE	EVENT CONV
TOTAL TERF STAGE								0	0.0	1	1.0	1	1.5						
TACTICAL EMPLOYMENT (TAC) STAGE																			
TAC	STAC	1802	LOW THREAT TAC INTRO	X							2.0			D	S	1	*	0112,1801	1802
TOTAL TAC STAGE								0	0.0	1	2.0	0	0						
CORE INTRODUCTION REVIEW (REV) STAGE																			
REV	SREV	1900	REVIEW CSII TRAINING	X	X						1.5			(N)	S	1	*	1119	1900
TOTAL REV STAGE								0	0.0	1	1.5	0	0						
CORE INTRODUCTION EVALUATION (H2P) STAGE																			
H2P	H2P	1902	H2P CHECK	X	X	X							2.0	D	A	1	*	All 1000 Phase events	1902
TOTAL H2P STAGE								0	0.0	0	0.0	1	2.0						
TOTAL CORE INTRODUCTION PHASE								44	94.5	20	23.0	35	42.5						
INSTRUCTOR TRAINING (5000 PHASE)																			
FLEET REPLACEMENT SQUADRON INSTRUCTOR E STAGE (FRSI)																			
FRSI-E	FRSI-E	5500	FRSI UT DAY FAM	X									1.5	D	A	1	*	6203,5202	5500
	FRSI-E	5501	FRSI UT SIM REV	X							2.0			D	S	1	*	5500	5501
	SFRSI-E	5502	FRSI UT INSTR	X							2.0			(N)	S/A	1	*	6203,5202	5502
	FRSI-E	5503	FRSI UT DAY CAL	X									1.5	D	A	1	*	5500	5503
	FRSI-E	5504	FRSI UT DAY FORM	X									1.5	D	A	2	*	5500	5504
	FRSI-E	5505	FRSI UT EXT	X									1.5	D	A	1	*	5500	5505
	FRSI-E	5506	FRSI CHECK	X	X								1.5	(N)	A	1	*	5500-5505	5506
TOTAL FRSI STAGE								0	0.0	2	4.0	5	7.5						
NIGHT SYSTEM FAMILIARIZATION INSTRUCTOR STAGE (NSFI)																			
NSFI	NSFI	5600	NSFI UT HLL NS FAM	X									1.5	NS	A	1	*	COURSE CATALOG	5600
	NSFI	5601	NSFI UT HLL NS FORM	X									1.5	NS	A	2	*	COURSE CATALOG	5601
	NSFI	5602	NSFI UT HLL EXT	X									1.5	NS	A	1	*	COURSE CATALOG	5602
	NSFI	5603	NSFI CHECK	X	X								1.5	NS	A	1	*	5600,5601,5602	5603
TOTAL NSFI STAGE								0	0.0	0	0.0	4	6.0						

CH-53E T&R MATRIX (1000 & 5000 PHASE)																			
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																			
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	MR	U	#	ACAD	#	SIM	#	FLT	CON	DEVIC E	#	REFLY	PREREQUISITE	EVENT CONV
CI SIMULATOR FAM STAGE (SFAM)																			
CI	CIUT	5900	INTRO TO COCKPIT PROCEDURES				X				1.0			D	S	1	*	CBT AND ACAD COMP	5900
	CIUT	5901	INTRO TO A/C EMERGENCIES				X				1.0			D	S	1	*	5900	5901
	CIUT	5902	INTRO ENGINE MALFUNCTIONS				X				1.0			D	S	1	*	5901	5902
	CIUT	5903	INTRO RUNNING LANDINGS & AUTOS				X				1.0			D	S	1	*	5902	5903
	CIUT	5904	INTRO GEARBOX MALFUNCTIONS				X				1.0			D	S	1	*	5903	5904
	CIUT	5905	INTRO CRM SKILLS				X				1.5			D	S	1	*	5904	5905
	CIUT	5906	PROGRESS CHECK				X				1.0			D	S	1	*	5905	5906
	CIUT	5907	ENG FAILURE / LANDINGS				X				1.5			D	S	1	*	5906	5907
	CIUT	5908	AFCs FAILURE / FAM				X				1.5			D	S	1	*	5907	5908
	CIUT	5909	PRAC FAM				X				1.5			D	S	1	*	5908	5909
	CIUT	5910	REV FAM & EPs				X				1.5			D	S	1	*	5909	5910
	CIUT	5911	NIGHT FAM				X				1.5			N	S	1	*	5910	5911
	CIUT	5912	INTRO BASIC INSTRUMENTS				X				1.0			D	S	1	*	5911	5912
	CIUT	5913	INTRO PARTIAL PANNEL				X				1.0			D	S	1	*	5912	5913
	CIUT	5914	INTRO ILS/LOCALIZER				X				1.0			D	S	1	*	5913	5914
	CIUT	5915	INTRO UNUSUAL ATTITUDES				X				1.0			D	S	1	*	5914	5915
	CIUT	5916	INTRO IFR LOST COMM				X				1.0			D	S	1	*	5915	5916
	CIUT	5917	BASIC INST, PRE APP				X				2.0			D	S	1	*	5916	5917
	CIUT	5918	IFR ROUTE				X				1.5			D	S	1	*	5917	5918
	CIUT	5920	INTRO FLIGHT PLANNING SOFTWARE,GPS,HNVs				X				1.0			D	S	1	*	5918	5920
	CIUT	5921	INTRO DAY FORM				X				1.0			D	S	1	*	5920	5921
	CIUT	5922	INTRO CALS				X				1.5			D	S	1	*	5921	5922
	CIUT	5923	INTRO SINGLE AND DUAL POINTS				X				2.0			D	S	1	*	5922	5923
	CIUT	5924	TERF				X				1.0			D	S	1	*	5923	5924
	CIUT	5925	REVIEW CIUT				X				2.0			D	S	1	*	5900-5924	5925
	CIUT	5926	REVIEW CIUT				X				2.0			D	S	1	*	5925	5926
	CIUT	5927	CIUT CHECK				X				2.0			D	S	1	*	5926	5927
	CIUT	5931	IP BRIEF				X				1.5			D	S	1	*	5927	5931
	CIUT	5932	REVIEW FAM MANEUVERS				X				1.5			D	S	1	*	5931	5932
	CIUT	5933	REVIEW BI, AIRWAY NAV				X				2.0			D	S	1	*	5932	5933
	CIUT	5934	REVIEW CAL				X				1.5			D	S	1	*	5933	5934
	CIUT	5935	REVIEW FORM				X				1.5			D	S	1	*	5934	5935
	CIUT	5936	REV EXT OPS				X				1.5			D	S	1	*	5935	5936
	CIUT	5937	STAN CHECK				X				1.5			D	S	1	*	5936	5937
TOTAL CONTRACT INSTRUCTOR CI FRs STAGE								0	0.0	34	47.0	0	0.0						

2.17 T&R SYLLABUS MATRIX (2000-7000 PHASE)

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
2000 PHASE - CORE SKILL BASIC																			
ACADEMIC STAGE (ACAD)																			
ACAD	ACAD	2000	CH-53 GPS (FAM)	X				1.0						G			*		2000
	ACAD	2001	ARC-210 SINGARS AND HAVEQUICK (*)	X	X	X		1.0						G			365		2001
	ACAD	2003	CH-53 INTERNAL CARGO OPERATIONS	X				1.0						G			*		2003
	ACAD	2004	CH-53 AAR/ALE-47 (*)	X	X	X		1.5						G			365		2004
	ACAD	2005	CH-53 TACFORM	X				1.0						G			*		2005
	ACAD	2007	DESERT AREA OPERATIONS (*)	X	X	X		1.0						G			365		2007
	ACAD	2008	MOUNTAIN OPERATIONS(*) (CAL)	X	X	X		1.0						G			365		2008
	ACAD	2009	COMBAT AIRCREW COORDINATION	X				1.0						G			*		2009
	ACAD	2010	AN/AVS-7 CH-53 ANVIS HUD	X				1.0						G			*		2010
	ACAD	2011	TERRAIN FLIGHT (TERF)	X				1.0						G			*		2011
	ACAD	2012	CH-53 APR-39 (*)	X	X	X		0.5						G			365		2012
	ACAD	2013	SURFACE TO AIR THREAT TO THE MAGTF	X				0.5						G			*		2013
	ACAD	2014	HEAVY LIFT OPERATIONS(*) (EXT)	X	X	X		1.0						G			365		2014
	ACAD	2015	ASSAULT SUPPORT TO ARTILLERY	X				1.0						G			*		2015
	ACAD	2016	CH-53 DM/GTR I (GTR)	X				1.0						G			*		2016
	ACAD	2017	IR SAM THREAT TO ASSAULT SUPPORT(*)	X	X	X		1.8						G			365		2017
	ACAD	2019	AAQ-24(*)	X	X	X		1.0						G			365		2019
	ACAD	2020	ADA THREAT TO ASSAULT SUPPORT	X				0.8						G			*		2020
	ACAD	2021	EVASIVE MANEUVERS AND COUNTER TACTICS	X				1.0						G			*		2021
	ACAD	2022	HAAR(*) (AR)	X	X	X		1.0						G			365		2022
	ACAD	2024	WEAPONS EMPLOYMENT TECHNIQUES	X				1.0						G			*		2024
	ACAD	2027	OBJECTIVE AREA PLANNING(*) (TAC)	X	X	X		1.0						G			365		2027
	ACAD	2028	ROE	X				1.0						G			*		2028
	ACAD	2029	EXECUTION CHECKLIST	X				0.5						G			*		2029
	ACAD	2030	PROBLEM FRAMING(*)	X	X	X		1.5						G			365		2030
	ACAD	2031	ASSAULT AN/AVS-9 COMPONENTS AND PREFLIGHT TECHNIQUES	X				1.0						G			*		2031
	ACAD	2032	NVG SYSTEMS AND IMAGE CHARACTERISTICS	X				1.0						G			*		2032
	ACAD	2033	NIGHT OPERATIONAL ENVIRONMENT (HLL)	X				1.0						G			*		2033
	ACAD	2034	NVG MISPERCEPTIONS AND ILLUSIONS	X				1.0						G			*		2034
	ACAD	2035	NVD ROUTE CONSIDERATIONS	X				1.0						G			*		2035
	ACAD	2036	NIGHT OPERATIONS AND PLANNING AIDS	X				1.0						G			*		2036
	ACAD	2037	HUMAN FACTORS	X				1.0						G			*		2037
	ACAD	2039	CH-53 AN AAQ-29 FLIR (LLL)	X				1.0						G			*		2039

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
	ACAD	2040	ASSAULT SUPPORT ESCORT TACTICS	X				1.0						G			*		2040
	ACAD	2041	BI AND ITG PLANNING CONSIDERATIONS	X				0.5						G			*		2041
	ACAD	2042	MULTI FUNCTION COLOR DISPLAY	X				1.0						G			*		2042
TOTAL ACAD STAGE							38	38.6	0	0.0	0	0.0							
FAMILIARIZATION / INSTRUMENT STAGE (FAM/INST)																			
FAM	ACAD	2000	CH-53 GPS	X				1.0						G			*		2000
	ACAD	2001	ARC-210 SINGARS AND HAVEQUICK(*)	X	X	X		1.0						G			365		2001
	ACAD	2003	CH-53 INTERNAL CARGO OPERATIONS	X				1.0						G			*		2003
	ACAD	2004	CH-53 AAR/ALE-47 (*)	X	X	X		1.5						G			365		2004
	SFAM	2100	SIM FAM, INSTR, EP	X	X	X				1.5			(N)	S/A	1		90		2100
	SFAM	2101	DAY HUD FAM/CAL	X	X					1.5			D	S/A	1		*		2101
	FAM	2105	FAM, INSTR, EP	X	X	X						1.5	(N)	A	1		365		2105
TOTAL FAM/INST STAGE							4	4.5	2	3.0	1	1.5							
FORMATION STAGE (FORM)																			
FORM	ACAD	2005	CH-53 TACFORM	X				1.0						G			*		2005
	FORM	2110	DAY FORM	X	X	X						1.5	D	A	2		365		2110
TOTAL FORM STAGE							1	1.0	0	0.0	1	1.5							
CONFINED AREA LANDING STAGE (CAL)																			
CAL	ACAD	2007	DESERT AREA OPERATIONS (*)	X	X	X		1.0						G			365		2007
	ACAD	2008	MOUNTAIN OPERATIONS(*) (CAL)	X	X	X		1.0						G			365		2008
	ACAD	2009	COMBAT AIRCREW COORDINATION	X				1.0						G			*		2009
	ACAD	2010	AN/AVS-7 CH-53 ANVIS HUD	X				1.0						G			*		2010
	SMAL	2200	MOUNTAIN AREA LANDINGS	X						1.0			D	S/A	1		*		2200
	CAL	2210	CALS	X								1.5	D	A	1		*		2210
	CAL	2211	SECTION CALS	X	X	X						1.5	D	A	2		365		2211
TOTAL CAL STAGE							4	4.0	1	1.0	2	3.0							
TERRAIN FLIGHT STAGE (TERF)																			
TERF	ACAD	2011	TERRAIN FLIGHT (TERF)	X				1.0						G			*		2011
	ACAD	2012	CH-53 APR-39 (*)	X	X	X		0.5						G			365		2012
	ACAD	2013	SURFACE TO AIR THREAT TO THE MAGTF	X				0.5						G			*		2013
	ACAD	2042	MULTI FUNCTION COLOR DISPLAY	X				1.0						G			*		2042
	TERF	2310	TERF	X								1.5	D	A	1		*		2310
	TERF	2311	SECTION TERF	X	X	X						1.5	D	A	2		365		2311
TOTAL TERF STAGE							4	3.0	0	0.0	2	3.0							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
EXTERNAL STAGE (EXT)																			
EXT	ACAD	2014	HEAVY LIFT OPERATIONS(*) (EXT)	X	X	X		1.0						G			365		2014
	ACAD	2015	ASSAULT SUPPORT TO ARTILLERY	X				1.0						G			*		2015
	SEXT	2400	HEAVY LIFT EXTERNALS SIM	X	X					1.5				S	1		*		2400
	EXT	2410	SINGLE POINT EXTERNALS	X	X							1.5		A	1		485		2410
	EXT	2411	DUAL POINT EXTERNALS	X	X	X						1.5		A	1		365		2411
	EXT	2420	HLL SINGLE POINT EXTERNALS	X	X							1.5	NS	A	1		485		2420
	EXT	2421	HLL DUAL POINT EXTERNALS	X	X	X						1.5	NS	A	1		180		2421
	EXT	2430	LLL EXTERNAL	X	X	X						1.5	NS	A	1		180		2430
	EXT	2441	HEAVY LIFT EXTERNALS	X	X	X						1.5	(NS)	A	1		365		2441
TOTAL EXT STAGE							2	2.0	1	1.5	6	9.0							
GROUND THREAT REACTION STAGE (GTR)																			
GTR	ACAD	2016	CH-53 DM/GTR I (GTR)	X				1.0						G			*		2016
	ACAD	2017	IR SAM THREAT TO ASSAULT SUPPORT(*)	X	X	X		1.8						G			365		2017
	ACAD	2019	AAQ-24(*)	X	X	X		1.0						G			365		2019
	ACAD	2020	ADA THREAT TO ASSAULT SUPPORT	X				0.8						G			*		2020
	ACAD	2021	EVASIVE MANEUVERS AND COUNTER TACTICS	X				1.0						G			*		2021
	SGTR	2500	GTR & ASE FAM SIM	X						1.5			(NS)	S	1		*		2500
	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A	2		365		2540
TOTAL GTR STAGE							5	5.6	1	1.5	1	1.5							
HELICOPTER AIR TO AIR REFUELING STAGE (HAAR)																			
HAAR	ACAD	2022	HAAR(*) (AR)	X	X	X		1.0						G			365		2022
	SHAAR	2600	DAY HAAR SIM	X						1.5				S	1		*		2600
	SHAAR	2601	NS HAAR SIM	X						1.5			NS	S	1		*		2601
	HAAR	2610	DAY HAAR LEFT HOSE PREFERRED	X								1.5	D	A	1+		*		2610
	HAAR	2611	DAY HAAR LEFT & RIGHT HOSE	X	X	X						1.5	D	A	1+		180		2611
	HAAR	2640	NS HAAR	X	X	X						1.5	NS	A	1+		180		2640
TOTAL HAAR STAGE							1	1.0	2	3.0	3	4.5							
AERIAL GUNNERY STAGE (AG)																			
AG	ACAD	2024	WEAPONS EMPLOYMENT TECHNIQUES	X				1.0						G			*		2024
	AG	2810	AERIAL GUNNERY	X								1.5	D	A	1+		*		2810
	AG	2840	NS GUNNERY	X	X	X						1.5	NS	A	1+		365		2840
TOTAL AG STAGE							3	3.0	0	0.0	2	3.0							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
TACTICS STAGE (TAC)																			
TAC	ACAD	2027	OBJECTIVE AREA PLANNING(*) (TAC)	X	X	X		1.0						G			365		2027
	ACAD	2028	ROE	X				1.0						G			*		2028
	ACAD	2029	EXECUTION CHECKLIST	X				0.5						G			*		2029
	ACAD	2030	PROBLEM FRAMING(*)	X	X	X		1.5						G			365		2030
	TAC	2910	LOW THREAT LEVEL TACTICS	X								2.0	D	A	2+		*		2910
	TAC	2911	MEDIUM THREAT LEVEL TACTICS	X	X	X						2.0	D	A	2+		365		2911
TOTAL TAC STAGE							4	4.0	0	0.0	2	4.0							
NIGHT SYSTEMS HIGH LIGHT LEVEL STAGE (NS HLL)																			
NS HLL	ACAD	2031	ASSAULT AN/AVS-9 COMPONENTS AND PREFLIGHT PROCEDURES	X				1.0						G			*		2031
	ACAD	2032	NVG SYSTEMS AND IMAGE CHARACTERISTICS	X				1.0						G			*		2032
	ACAD	2033	NIGHT OPERATIONAL ENVIRONMENT (HLL)	X				1.0						G			*		2033
	ACAD	2034	NVG MISPERCEPTIONS AND ILLUSIONS	X				1.0						G			*		2034
	ACAD	2035	NVD ROUTE CONSIDERATIONS	X				1.0						G			*		2035
	ACAD	2036	NIGHT OPERATIONS AND PLANNING AIDS	X				1.0						G			*		2036
	SHLL	2102	OPERATION OF AIRCRAFT NS	X						1.5			HLL	S/A	1		*		2102
	HLL	2120	HLL FORM	X								1.5	HLL	A	2		*		2120
	HLL	2220	HLL CALS	X								1.5	HLL	A	1		*		2220
	HLL	2221	HLL SECTION CALS	X	X	X						1.5	HLL	A	2		180		2221
	HLL	2320	HLL TERF	X								1.5	HLL	A	1		*		2320
	HLL	2321	HLL SECTION TERF	X	X	X						1.5	HLL	A	2		180		2321
	HLL	2920	HLL CHECK/LOW THREAT TACTICS	X	X	X						2.0	HLL	A	2+		365		2920
TOTAL NS HLL STAGE							6	6.0	1	1.5	6	9.5							
NIGHT SYSTEMS LOW LIGHT LEVEL STAGE (NS LLL)																			
NS LLL	ACAD	2037	HUMAN FACTORS	X				1.0						G			*		2037
	ACAD	2039	CH-53 AN/AAQ-29 FLIR (LLL)	X				1.0						G			*		2039
	ACAD	2040	ASSAULT SUPPORT ESCORT TACTICS	X				1.0						G			*		2040
	ACAD	2041	BI AND ITG PLANNING CONSIDERATIONS	X				0.5						G			*		2041
	LLL	2230	LLL CALS	X								1.5	LLL	A	1		*		2230
	LLL	2231	LLL SECTION CALS	X	X	X						1.5	LLL	A	2		180		2231
	LLL	2330	LLL TERF	X								1.5	LLL	A	1		*		2330
	LLL	2331	LLL SECTION TERF	X	X	X						1.5	LLL	A	2		180		2331
	LLL	2930	LLL CHECK/MED THREAT TACTICS	X	X	X						2.0	LLL	A	2+		365		2930
TOTAL NS LLL STAGE							4	3.5	0	0.0	5	8.0							
CORE SKILL PHASE TOTAL							76	76.2	8	11.5	31	48.5							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																				
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV	
3000 PHASE - MISSION SKILLS																				
ACADEMIC STAGE (ACAD)																				
	ACAD	3000	RAPID RESPONSE PLANNING	X				1.0						G			*		3000	
	ACAD	3001	ELECTRONIC WARFARE THREAT TO THE MAGTF	X				0.7						G			*		3001	
	ACAD	3002	NEO EXECUTION	X				0.8						G			*		3002	
	ACAD	3003	INTEL PREP OF THE BATTLESPACE	X				0.8						G			*		3003	
	ACAD	3004	PERSONNEL RECOVERY	X				1.0						G			*		3004	
	ACAD	3005	TRAP TTPs	X				0.8						G			*		3005	
	ACAD	3006	CASEVAC	X				0.5						G			*		3006	
	ACAD	3007	CIRCADIAN RHYTHM AND FATIGUE	X				1.0						G			*		3007	
	ACAD	3008	INTRO TO NVG TACTICAL EMPLOYMENT	X				1.0						G			*		3008	
TOTAL ACAD STAGE							9	7.6	0	0.0	0	0.0								
ASSAULT TRANSPORT STAGE (AT)																				
CAT	ACAD	3000	RAPID RESPONSE PLANNING	X										G			*		3000	
	ACAD	3001	ELECTRONIC WARFARE THREAT TO THE MAGTF	X										G			*		3001	
	ACAD	3002	NEO EXECUTION	X										G			*		3002	
	ACAD	3003	INTEL PREP OF THE BATTLESPACE	X										G			*		3003	
	GTR CSP		2016,2017,2019,2020,2021,2500,2540																	
	AG CSP		2023,2024,2025,2810,2840																	
	TAC CSP		2027,2028,2029,2030,2910,2911																	
	NS LLL CSP		2037,2039,2040,2041,2230,2231,2330,2331,2930																	
	CAT	3240	ASSAULT TRANSPORT TACTICS	X	X	X							2.0	(N)	A/S	2+	X	120		3240
TOTAL AT STAGE							0	0.0	0	0.0	1	2.0								
AERIAL DELIVERY STAGE (AD)																				
AD	EXT CSP		2014,2015,2400,2410,2411,2420,2421,2430,2441																	
	GTR CSP		2016,2017,2019,2020,2021,2500,2540																	
	AG CSP		2023,2024,2025,2810,2840																	
	TAC CSP		2027,2028,2029,2030,2910,2911																	
	NS LLL CSP		2037,2039,2040,2041,2230,2231,2330,2331,2930																	
	AD	3340	AERIAL DELIVERY TACTICS	X	X	X							2.0	(N)	A/S	2+	X	120		3340
TOTAL AD STAGE							0	0.0	0	0.0	1	2.0								

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL STAGE (TRAP)																			
TRAP	ACAD	3004	PERSONNEL RECOVERY	X										G			*		3004
	ACAD	3005	TRAP TTPs	X										G			*		3005
	EXT CSP		2014,2015,2400,2410,2411,2420,2421,2430,2441																
	GTR CSP		2016,2017,2019,2020,2021,2500,2540																
	AG CSP		2023,2024,2025,2810,2840																
	TAC CSP		2027,2028,2029,2030,2910,2911																
	NS LLL CSP		2037,2039,2040,2041,2230,2231,2330,2331,2930																
	HAAR CSP		2022, 2600, 2601,2610,2611,2640																
TRAP	3440	TRAP TACTICS	X	X	X							2.0	(N)	A/S	2+	X	120		3440
TOTAL TRAP STAGE							0	0.0	0	0.0	1	2.0							
AIR EVACUATION STAGE (AE)																			
AE	ACAD	3006	CASEVAC	X										G			*		3006
	ACAD	3007	CIRCADIAN RHYTHM AND FATIGUE	X										G			*		3007
	ACAD	3008	INTRO TO NVG TACTICAL EMPLOYMENT	X										G			*		3008
	GTR CSP		2016,2017,2019,2020,2021,2500,2540																
	AG CSP		2023,2024,2025,2810,2840																
	TAC CSP		2027,2028,2029,2030,2910,2911																
	NS LLL CSP		2037,2039,2040,2041,2230,2231,2330,2331,2930																
AE	3540	AERIAL EVACUATION TACTICS	X	X	X							2.0	(N)	A/S	2+	X	120		3540
TOTAL AE STAGE							0	0.0	0	0.0	1	2.0							
TOTAL MISSION PHASE							13	10.9	0	0.0	4	8.0							
4000 PHASE – CORE PLUS																			
ACADEMIC STAGE (ACAD)																			
ACAD	ACAD	4000	RF SAM	X				0.5						G			*		4000
	ACAD	4001	DM GAME PLANNING	X				0.7						G			*		4001
	ACAD	4002	CH-53 DM/GTR II	X				1.5						G			*		4002
	ACAD	4003	HELICOPTER PS AND EM	X				1.0						G			*		4003
	ACAD	4004	FW THREAT TO ASSAULT SUPPORT	X				1.0						G			*		4004
	ACAD	4005	ATTACK HELO THREAT TO THE MAGTF	X				0.5						G			*		4005
	ACAD	4006	AVIATION DELIVERED GROUND REFUELING	X				1.0						G			*		4006
	ACAD	4007	URBAN OPERATIONS	X				1.5						G			*		4007
	ACAD	4008	CAS	X				1.0						G			*		4008
	ACAD	4009	AIR ASSAULT OPERATIONS	X				0.8						G			*		4009
	ACAD	4010	MAGTF TARGETING AND FIRE SUPPORT PLANNING	X				1.0						G			*		4010
	ACAD	4012	RADAR PRINCIPLES	X				1.0						G			*		4012
	ACAD	4011	TBFDS	X				1.0						G			*		4011
	ACAD	4013	CH-53 AIR COMMAND AND CONTROL	X				1.0						G			*		4013
ACAD	4014	SHIPBOARD OPERATIONS	X	X			1.0						G			*			
TOTAL ACAD STAGE							15	14.5	0	0.0	0	0.0							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
HELICOPTER INSERTION & EXTRACTION TECHNIQUES STAGE (HIE)																			
HIE	HIE	4110	HELOCAST	X	X	X						1.5		A	1		485		4110
	HIE	4140	FASTROPE/SPIE/RAPPEL	X								1.5	(NS)	A	1		*		4140
	HIE	4141	PARA OPS	X								1.5	(NS)	A	1		*		4141
TOTAL HIE STAGE							0	0.0	0	0.0	3	4.5							
BATTLEFIELD ILLUMINATION STAGE (BI)																			
BI	BI	4340	BATTLEFIELD ILLUMINATION	X						0.0		1.0	NS	A/S	1		*		4340
							0	0.0	1	0.0	1	1.0							
TERRAIN FLIGHT EXTERNALS STAGE (TERF EXT)																			
EXT	SEXT	4412	DAY TERF EXTERNALS	X	X					1.5				S/A	1		365		4412
	SEXT	4440	NS TERF EXTERNALS	X	X	X				1.5			NS	S/A	1		365		4440
							0	0.0	2	3.0	0	0.0							
GROUND THREAT REACTION STAGE (GTR)																			
GTR	ACAD	4000	RF SAM	X										G			*		4000
	ACAD	4012	RADAR PRINCIPLES	X										G			*		4012
	GTR	4540	RADAR GTR	X	X	X						1.5	(NS)	A	2		365		4540
TOTAL GTR STAGE							0	0.0	0	0.0	1	1.5							
DEFENSIVE MEASURES STAGE (DM)																			
DM	ACAD	4001	DM GAME PLANNING	X										G			*		4001
	ACAD	4002	CH-53 DM/GTR II	X										G			*		4002
	ACAD	4003	HELICOPTER PS AND EM	X										G			*		4003
	ACAD	4004	FW THREAT TO ASSAULT SUPPORT	X										G			*		4004
	ACAD	4005	ATTACK HELO THREAT TO THE MAGTF	X										G			*		4005
	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
TOTAL DM STAGE							0	0.0	0	0.0	2	3.0							
CHEMICAL, BIOLOGICAL, RADIATION, AND NUCLEAR STAGE (CBRN)																			
CBRN	SCBRN	4600	CBRN FAM	X						1.5			(N)	S/A	1	X	*		4600
TOTAL CBRN STAGE							0	0.0	1	1.5	0	0.0							
FIELD CARRIER LANDING PRACTICE (FCLP)																			
FCLP	ACAD	4014	SHIPBOARD OPERATIONS	X	X			0						G			*		4014
	SFCLP	4700	SIM CQ	X						1.5			(N)	S	1		*		2700
	FCLP	4710	DAY FCLP	X	X	X						1.5		A	1		365		2710
	FCLP	4740	NS FCLP	X	X	X						1.5	NS	A	1		365		2742
FCLP TOTAL							0	0.0	1	1.5	2	3.0							
CARRIER QUALIFICATION STAGE (CQ)																			
CQ	DAY CQ	4711	DAY CQ	X	X	X						1.5	D	A	1		365		4711
	N CQ	4741	UNAIIDED CQ	X	X	X						1.0	N*	A/S	1		365		4740
	NS CQ	4742	NS CQ	X	X	X						1.0	NS	A	1		365		4743
TOTAL CQ STAGE							0	0.0	0	0.0	3	3.5							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
TACTICS STAGE (TAC)																			
TAC	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A	2		365		2540
	AG	2840	NS GUNNERY	X	X	X						1.5	NS	A	1		365		2840
	ACAD	4006	ADGR	X										G			*		4006
	ACAD	4007	URBAN OPERATIONS	X										G			*		4007
	ACAD	4013	CH-53 AIR COMMAND AND CONTROL (AC2)	X										G			*		4013
	TAC	4940	DIV TACTICS	X	X	X						2.0	(NS)	A	3+		365		4940
	TAC	4941	URBAN TACTICS	X	X	X						2.0	(NS)	A	2		365		4941
	TAC	4942	LONG RANGE TACTICS	X	X	X						4.0	(NS)	A	2		365		4942
TOTAL TAC STAGE							0	0.0	0	0.0	5	11.0							
RIE STAGE																			
RIE	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A	2		365		2540
	AG	2840	NS GUNNERY	X	X	X						1.5	NS	A	1		365		2840
	ACAD	4008	CAS	X										G			*		4008
	ACAD	4009	AIR ASSAULT OPERATIONS	X										G			*		4009
	ACAD	4010	MAGTF TARGETING AND FIRE SUPPORT PLANNING	X										G			*		4010
	RIE	4980	RIE TACTICS	X	X	X						2.0	(N)	A/S	1+	X	365		4980
TOTAL RIE STAGE							0	0.0	0	0.0	3	5.0							
AVIATION DELIVERED GROUND REFUELING STAGE (ADGR)																			
ADGR	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A	2		365		2540
	AG	2840	NS GUNNERY	X	X	X						1.5	NS	A	1		365		2840
	ACAD	4011	TBFD	X										G			*		4011
	ADGR	4981	ADGR TACTICS	X	X	X						2.0	(N)	A	1+		365		4981
TOTAL ADGR STAGE							0	0.0	0	0.0	3	5.0							
SEA BASED OPERATIONS STAGE (SEA)																			
SEA	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A	2		365		2540
	AG	2840	NS GUNNERY	X	X	X						1.5	NS	A	1		365		2840
	SEA	4982	SEA BASED TACTICS	X	X	X						2.0	(N)	A/S	1+	X	365		4982
TOTAL SEA STAGE							0	0.0	0	0.0	3	5.0							
TOTAL CORE PLUS PHASE							0	0.0	3	4.5	21	36.5							
INSTRUCTOR TRAINING (5000 PHASE)																			
ACADEMICS STAGE (ACAD)																			
ACAD	ACAD	5000	LEARNING THEORY AND INSTRUCTIONAL TECHNIQUES	X				1.0						G			*		5000
TOTAL ACAD STAGE							1	1.0	0	0.0	0	0.0							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
BASIC INSTRUCTOR STAGE (BIP)																			
BIP	ACAD	5000	LEARNING THEORY AND INSTRUCTIONAL TECHNIQUES	X										G			*		5000
	BIP	5100	BIP IUT FAM/CAL/INST	X						1.5			D	S/A	1		*		5100
	BIP	5101	BIP IUT EXT/CQ	X						1.5			D	S/A	1		*		5101
	BIP	5110	BIP CHECK	X								1.5	D	A	1		*		5110
TOTAL BIP STAGE							0	0.0	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		*		5200
	TERFI	5201	TERFI UT EXT	X								1.5	D	A	1		*		5201
	TERFI	5202	TERFI CHECK	X	X							1.5	D	A	2		*		5202
TOTAL TERFI STAGE							0	0.0	0	0.0	3	4.5							
AERIAL REFUELING INSTRUCTOR STAGE (ARI)																			
ARI	ARI	5300	ARI DAY	X								1.5	D	A	1		*		5300
	ARI	5301	ARI NIGHT	X	X							1.5	NS	A	1		*		5301
TOTAL ARI STAGE							0	0.0	0	0.0	2	3.0							
TACTICAL SIMULATOR INSTRUCTOR STAGE (TSI)																			
TSI	TSI	5410	SIMULATOR OPERATION DEMO	X						1.0			(NS)	S			*		5410
	TSI	5411	TACTICAL SIMULATOR INSTRUCTOR CHECK	X						1.0			(NS)	S			*		5411
TOTAL TSI STAGE							0	0.0	2	2.0	0	0.0							
DEFENSIVE MEASURES INSTRUCTOR STAGE (DMI)																			
DMI	DMI	5700	2 V GROUND THREAT	X								1.5	D	A	2		*		5700
	DMI	5701	2 V FW/RW	X								1.5	D	A	2		*		5701
	DMI	5702	2 V FW/RW	X	X							1.5	D	A	2		*		5702
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			*		5800
	NSI	5801	NSI UT LOW WORK	X								1.5	NS	A	1		*		5801
	NSI	5802	NSI UT CALS/EXT	X								1.5	NS	A	1		*		5802
	NSI	5803	NSI UT TERF	X								1.5	NS	A	2		*		5803
	NSI	5804	NSI UT TACEX	X								1.5	NS	A	2		*		5804
	NSI	5805	NSI CHECK	X	X							4.5	NS	A	2		*		5805
TOTAL NSI STAGE							0	0.0	1	1.5	5	10.5							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)																			
ACADEMICS STAGE (ACAD)																			
ACAD	ACAD	6010	TACTICAL FLIGHT BRIEFING	X				1.5						G			*		6010
	ACAD	6011	AMC	X				0.8						G			*		6011
	ACAD	6012	FUNCTIONAL CHECK FLIGHT READINGS	X	X			6.0						G			*		6012
	ACAD	6013	FCP SEMINAR	X	X			16.0						G			*		6013
TOTAL ACADEMIC STAGE							4	24.3	0	0.0	0	0.0							
NATOPS STAGE																			
NATOPS	NATOPS	6000	NATOPS OPEN BOOK EXAM	X	X	X		3.0						G			365	X	6000
	NATOPS	6001	NATOPS CLOSED BOOK EXAM	X	X	X		1.0						G			365	X	6001
	NATOPS	6002	NATOPS ORAL EXAM	X	X	X		2.0						G			365	X	6002
	NATOPS	6004	MONTHLY EP EXAM	X	X	X		1.0						G			30	X	6004
	NATOPS	6100	NATOPS EVALUATION	X	X	X						1.5	(N)	S/A	1		365	X	6100
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						G			365	X	6003
	CRM	6101	PRACTICE CRM PRICIPLES	X	X	X						1.5	(N)	S/A	1		365	X	6101
TOTAL CRM STAGE							1	3.0	0	0.0	1	1.5							
INSTRUMENT STAGE (INST)																			
INST	INST	6005	INSTRUMENT GROUND SCHOOL	X	X	X		4.0						G			365	X	6005
	INST	6006	WRITTEN INSTRUMENT EXAM	X	X	X		1.0						G			365	X	6006
	INST	6102	INSTRUMENT EVALUATION	X	X	X						1.5		S/A	1		365	X	6102
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		*		6120
	HAC	6121	NS HAC REVIEW	X								1.5	NS	A/S	1		*		6121
	HAC	6122	DAY INTO NIGHT HAC EVALUATION	X	X							2.0	(N)	A	1		*		6122
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	*		6200
	SL	6201	MCT BASED TACTICAL SCENARIO	X								1.5	(NS)	A/S	2	X	*		6201
	SL	6202	DAY OR NIGHT CORE SKILL SL REVIEW	X								1.5	(NS)	A/S	2	X	*		6202
	SL	6203	NIGHT SL EVAL W FLSE	X	X							1.5	NS	A	2		*		6203
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	*		6300
	DL	6301	MCT BASED TACTICAL SCENARIO	X								1.5	(NS)	A/S	3+	X	*		6301
	DL	6302	DL EVALUATION W FLSE	X	X							1.5	(NS)	A	3+		*		6302
TOTAL DL STAGE							0	0.0	0	0.0	3	4.5							

CH-53E T&R SYLLABUS MATRIX (2000-7000 Phase)																			
SKILL	PREFIX	TRNG CODE	T&R EVENT DESCRIPTION	B	R	M	#	ACAD	#	SIM	#	FLT	CON	DEVICE	#	TEN +	REFLY	EOM	EVENT CONV
FLIGHT LEADER STAGE (FL)																			
FL	FL	6400	FLIGHT LEADER EVAL W FLSE	X								1.5	(NS)	A	5+		*		6400
TOTAL FL STAGE							0	0.0	0	0.0	1	1.5							
AIR MISSION COMMANDER STAGE (AMC)																			
AMC	AMC	6500	AMC EVAL W FLSE	X								1.5	(NS)	A/G	5+		*		6500
							0	0.0	0	0.0	1	1.5							
FUNCTIONAL CHECK PILOT STAGE (FCP)																			
FCP	FCP	6600	FCP OPEN BOOK EXAM	X	X			3.0						G			*		6600
	FCP	6610	INTRO AFCS	X						1.5			D	S/A	1		*		6610
	FCP	6611	REVIEW AFCS	X								1.5	D	A	1		*		6611
	FCP	6612	INTRO MECH FLIGHT CONTROL	X						1.5			D	S/A	1		*		6612
	FCP	6613	REV MECH FLIGHT CONTROL	X								1.5	D	A	1		*		6613
	FCP	6614	INTRO ENGINES	X						1.5			D	S/A	1		*		6614
	FCP	6615	REV ENGINES	X								1.5	D	A	1		*		6615
	FCP	6616	INTRO FULL FCF CARD	X	X					1.5			D	S/A	1		*		6616
	FCP	6617	FCP EVAL	X	X							1.5	D	A/S	1		*		6617
FCP	6618	FCPI/AFCPi EVAL	X	X					1.5			D	S/A	1			365		6618
TOTAL FCP STAGE							1	3.0	5	7.5	4	6.0							
7000 PHASE - EVALUATION																			
MET	CAT	7001	COMBAT ASSAULT TRANS	X	X	X						1.5	(NS)	A	2+		730		7001
	AD	7002	AERIAL DELIVERY	X	X	X						1.5	(NS)	A	2+		730		7002
	TRAP	7003	TRAP	X	X	X						1.5	(NS)	A	2+		730		7003
	AE	7004	AIR EVACUATION	X	X	X						1.5	(NS)	A	2+		730		7004
	RIE	7005	RAPID INSERTION/EXTRACTION	X	X	X						1.5	(NS)	A	2+		730		7005
	ADGR	7006	AVIATION DELIVERED GROUND REFUELING	X	X	X						1.5	(NS)	A	2+		730		7006
	SEA	7007	SEA BASED TACTICS	X	X	X						1.5	(NS)	A	2+		730		7007
TOTAL							0	0.0	0	0.0	7	10.5							

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2.18 ATTAIN AND MAINTAIN MATRIX (2000-4000 PHASE)

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
2000 PHASE - CORE SKILL BASIC									
ACADEMIC STAGE (ACAD)									
ACAD	ACAD	CH-53 GPS (FAM)	2000			*			
	ACAD	ARC-210 SINCARS AND HAVEQUICK (*)	2001	2001	2001	365			
	ACAD	CH-53 INTERNAL CARGO OPERATIONS	2003			*			
	ACAD	CH-53 AAR/ALE-47 (*)	2004	2004	2004	365			
	ACAD	CH-53 TACFORM	2005			*			
	ACAD	DESERT AREA OPERATIONS (*)	2007	2007	2007	365			
	ACAD	MOUNTAIN OPERATIONS(*) (CAL)	2008	2008	2008	365			
	ACAD	COMBAT AIRCREW COORDINATION	2009			*			
	ACAD	AN/AVS-7 CH-53 ANVIS HUD	2010			*			
	ACAD	TERRAIN FLIGHT (TERF)	2011			*			
	ACAD	CH-53 APR-39 (*)	2012	2012	2012	365			
	ACAD	SURFACE TO AIR THREAT TO THE MAGTF	2013			*			
	ACAD	HEAVY LIFT OPERATIONS(*) (EXT)	2014	2014	2014	365			
	ACAD	ASSAULT SUPPORT TO ARTILLERY	2015			*			
	ACAD	CH-53 DM/GTR I (GTR)	2016			*			
	ACAD	IR SAM THREAT TO ASSAULT SUPPORT(*)	2017	2017	2017	365			
	ACAD	AAQ-24(*)	2019	2019	2019	365			
	ACAD	ADA THREAT TO ASSAULT SUPPORT	2020			*			
	ACAD	EVASIVE MANEUVERS	2021			*			
	ACAD	HAAR(*) (AR)	2022	2022	2022	365			
	ACAD	WEAPONS EMPLOYMENT TECHNIQUES	2024			*			
	ACAD	OBJECTIVE AREA PLANNING(*) (TAC)	2027	2027	2027	365			
	ACAD	ROE	2028			*			
	ACAD	EXECUTION CHECKLIST	2029			*			
	ACAD	PROBLEM FRAMING(*)	2030	2030	2030	365			
	ACAD	ASSAULT AN/AVS-9 COMPONENTS AND PREFLIGHT PROCEDURES	2031			*			
	ACAD	NVG SYSTEMS AND IMAGE CHARACTERISTICS	2032			*			
	ACAD	NIGHT ROUTE CONSIDERATIONS (HLL)	2033			*			

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
	ACAD	NVD MISPERCEPTIONS AND ILLUSIONS	2034			*			
	ACAD	NVD ROUTE CONSIDERATIONS	2035			*			
	ACAD	NIGHT OPERATIONS AND PLANNING AIDS	2036			*			
	ACAD	HUMAN FACTORS	2037			*			
	ACAD	CH-53 AN/AAQ-29 FLIR (LLL)	2039			*			
	ACAD	ASSAULT SUPPORT ESCORT TACTICS	2040			*			
	ACAD	BI AND ITG PLANNING CONSIDERATIONS	2041			*			
	ACAD	MULTI FUNCTION COLOR DISPLAY	2042			*			
FAMILIARIZATION / INSTRUMENT STAGE (FAM/INST)									
FAM	ACAD	CH-53 GPS	2000			*			
	ACAD	ARC-210 SINCARS AND HAVEQUICK(*)	2001	2001	2001	365			
	ACAD	CH-53 INTERNAL CARGO OPERATIONS	2003			*			
	ACAD	CH-53 AAR/ALE-47 (*)	2004	2004	2004	365			
	SFAM	SIM FAM, INSTR, EP	2100	2100	2100	90	1902		
	SFAM	DAY HUD FAM/CAL	2101	2101		*	2100		
	FAM	FAM, INSTR, EP	2105	2105	2105	365	2100		
FORMATION STAGE (FORM)									
FORM	ACAD	CH-53 TACFORM	2005			*			
	FORM	DAY FORM	2110	2110	2110	365	2005,2105		2105
CONFINED AREA LANDING STAGE (CAL)									
CAL	ACAD	DESERT AREA OPERATIONS (*)	2007	2007	2007	365			
	ACAD	MOUNTAIN OPERATIONS(*) (CAL)	2008	2008	2008	365			
	ACAD	COMBAT AIRCREW COORDINATION	2009			*			
	ACAD	AN/AVS-7 CH-53 ANVIS HUD	2010			*			
	SMAL	MOUNTAIN AREA LANDINGS	2200			*	2008,2105		
	CAL	CALS	2210			*	2101,2105		
	CAL	SECTION CALS	2211	2211	2211	365	2110,2210		2105,2110
TERRAIN FLIGHT STAGE (TERF)									
TERF	ACAD	TERRAIN FLIGHT (TERF)	2011			*			
	ACAD	CH-53 APR-39 (*)	2012	2012	2012	365			
	ACAD	SURFACE TO AIR THREAT TO THE MAGTF	2013			*			
	ACAD	MULTI FUNCTION COLOR DISPLAY	2042			*			
	TERF	TERF	2310			*	2100,2011,2012,2013,2042		
	TERF	SECTION TERF	2311	2311	2311	365	2110,2310		2105,2110

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
EXTERNAL STAGE (EXT)									
EXT	ACAD	HEAVY LIFT OPERATIONS(*) (EXT)	2014	2014	2014	365			
	ACAD	ASSAULT SUPPORT TO ARTILLERY	2015			*			
	SEXT	HEAVY LIFT EXTERNALS SIM	2400	2400		*	1902,2101		
	EXT	SINGLE POINT EXTERNALS	2410	2410		485	2400,2014,2015,2210		2105
	EXT	DUAL POINT EXTERNALS	2411	2411	2411	365	2014,2210		2105,2410
	EXT	HLL SINGLE POINT EXTERNALS	2420	2420		485	2220,2410		2105,2410
	EXT	HLL DUAL POINT EXTERNALS	2421	2421	2421	180	2220,2411		2105,2410,2411,2420
	EXT	LLL EXTERNAL	2430	2430	2430	180	2230,2420,2421,2920		2105,2410,2411,2420,2421
EXT	HEAVY LIFT EXTERNALS	2441	2441	2441	365	2310,2400,2410		2105,2410	
GROUND THREAT REACTION STAGE (GTR)									
GTR	ACAD	CH-53 DM/GTR I (GTR)	2016			*			
	ACAD	IR SAM THREAT TO ASSAULT SUPPORT(*)	2017	2017	2017	365			
	ACAD	AAQ-24(*)	2019	2019	2019	365			
	ACAD	ADA THREAT TO ASSAULT SUPPORT	2020			*			
	ACAD	EVASIVE MANEUVERS	2021			*			
	SGTR	GTR & ASE FAM SIM	2500			*	2016,2017,2018,2019,2020,2021,2311		
	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
HELICOPTER AIR TO AIR REFUELING STAGE (HAAR)									
HAAR	ACAD	HAAR(*) (AR)	2022	2022	2022	365			
	SHAAR	DAY HAAR SIM	2600			*	2100,2022		
	SHAAR	NS HAAR SIM	2601			*	2600		
	HAAR	DAY HAAR LEFT HOSE PREFERRED	2610			*	2110,2600		
	HAAR	DAY HAAR LEFT & RIGHT HOSE	2611	2611	2611	180	2610		2105
	HAAR	NS HAAR	2640	2640	2640	180	2101,2120,2601,2611		2022,2105,2611
AERIAL GUNNERY STAGE (AG)									
AG	ACAD	CH-53 WEAPONS SYSTEMS AND TRAINING (AG)	2023			*			
	ACAD	WEAPONS EMPLOYMENT TECHNIQUES	2024			*			
	ACAD	INTRO TO LASER SYSTEMS AND SAFETY	2025			*			
	AG	AERIAL GUNNERY	2810			*	2023,2024,2025,2105		2105
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
TACTICS STAGE (TAC)									
TAC	ACAD	OBJECTIVE AREA PLANNING(*) (TAC)	2027	2027	2027	365			
	ACAD	ROE	2028			*			
	ACAD	EXECUTION CHECKLIST	2029			*			
	ACAD	PROBLEM FRAMING(*)	2030	2030	2030	365			
	TAC	LOW THREAT LEVEL TACTICS	2910			*	2027,2028,2029,2030,2211,2311		2105,2110,2211
	TAC	MEDIUM THREAT LEVEL TACTICS	2911	2911	2911	365	2910		2105,2110,2211
NIGHT SYSTEMS HIGH LIGHT LEVEL STAGE (NS HLL)									
NS HLL	ACAD	ASSAULT AN/AVS-9 COMPONENTS AND PREFLIGHT PROCEDURES	2031			*			
	ACAD	NVG SYSTEMS AND IMAGE CHARACTERISTICS	2032			*			
	ACAD	NIGHT OPERATIONAL ENVIRONMENT (HLL)	2033			*			
	ACAD	NVG MISPERCEPTIONS AND ILLUSIONS	2034			*			
	ACAD	NVD ROUTE CONSIDERATIONS	2035			*			
	ACAD	NIGHT OPERATIONS AND PLANNING AIDS	2036			*			
	SHLL	OPERATIONS OF AIRCRAFT NS	2102			*	2031,2100		2105
	HLL	HLL FORM	2120			*	2036,2102,2110		2105
	HLL	HLL CALS	2220			*	2102,2210		2105
	HLL	HLL SECTION CALS	2221	2221	2221	180	2120,2220		2105,2110,2211
	HLL	HLL TERF	2320			*	2102,2310		2105
	HLL	HLL SECTION TERF	2321	2321	2321	180	2120,2320		2105,2110,2311
	HLL	HLL CHECK/LOW THREAT TACTICS	2920	2920	2920	365	2221,2321,2910		2105,2110,2211,2221
NIGHT SYSTEMS LOW LIGHT LEVEL STAGE (NS LLL)									
NS LLL	ACAD	HUMAN FACTORS	2037			*			
	ACAD	CH-53 AN AAQ-29 FLIR (LLL)	2039			*			
	ACAD	ASSAULT SUPPORT ESCORT TACTICS	2040			*			
	ACAD	BI AMND ITG PLANNING CONSIDERATIONS	2041			*			
	LLL	LLL CALS	2230			*	2920		2105
	LLL	LLL SECTION CALS	2231	2231	2231	180	2230		2105,2110,2211,2221
	LLL	LLL TERF	2330			*	2920		2105
	LLL	LLL SECTION TERF	2331	2331	2331	180	2330		2105,2110,2311,2321
	LLL	LLL CHECK/MED THREAT TACTICS	2930	2930	2930	365	2231,2331,2911		2105,2110,2211,2221,2231,2911,2920

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
3000 PHASE - MISSION SKILLS									
ACADEMIC STAGE (ACAD)									
ACAD	ACAD	RAPID RESPONSE PLANNING	3000			*			
	ACAD	ELECTRONIC WARFARE THREAT TO THE MAGTF	3001			*			
	ACAD	NEO EXECUTION	3002			*			
	ACAD	INTEL PREP OF THE BATTLESPACE	3003			*			
	ACAD	PERSONNEL RECOVERY	3004			*			
	ACAD	CH-53 SPECIFIC TRAP TTPs	3005			*			
	ACAD	CASEVAC	3006			*			
	ACAD	CIRCADIAN RHYTHM AND FATIGUE	3007			*			
	ACAD	INTRO TO NVG TACTICAL EMPLOYMENT	3008			*			
COMBAT ASSAULT TRANSPORT STAGE (CAT)									
CAT	ACAD	NEO EXECUTION	3002			*			
	ACAD	INTEL PREP OF THE BATTLESPACE	3003			*			
	ACAD	CH-53 DM/GTR I (GTR)	2016			*			
	ACAD	IR SAM THREAT TO ASSAULT SUPPORT(*)	2017	2017	2017	365			
	ACAD	AAQ-24(*)	2019	2019	2019	365			
	ACAD	ADA THREAT TO ASSAULT SUPPORT	2020			*			
	ACAD	EVASIVE MANEUVERS	2021			*			
	SGTR	GTR & ASE FAM SIM	2500			*	2016,2017,2018,2019,2020,2021,2311		
	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	ACAD	CH-53 WEAPONS SYSTEMS AND TRAINING (AG)	2023			*			
	ACAD	WEAPONS EMPLOYMENT TECHNIQUES	2024			*			
	ACAD	INTRO TO LASER SYSTEMS AND SAFETY	2025			*			
	AG	AERIAL GUNNERY	2810			*	2023,2024,2025,2105		2105
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	OBJECTIVE AREA PLANNING(*) (TAC)	2027	2027	2027	365			
	ACAD	ROE	2028			*			
	ACAD	EXECUTION CHECKLIST	2029			*			
	ACAD	PROBLEM FRAMING(*)	2030	2030	2030	365			
	TAC	LOW THREAT LEVEL TACTICS	2910			*	2027,2028,2029,2030,2211,2311		2105,2110,2211

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
	TAC	MEDIUM THREAT LEVEL TACTICS	2911	2911	2911	365	2910		2105,2110,2211
	ACAD	HUMAN FACTORS	2037			*			
	ACAD	CH-53 AN AAQ-29 FLIR (LLL)	2039			*			
	ACAD	ASSAULT SUPPORT ESCORT TACTICS	2040			*			
	ACAD	BI AMND ITG PLANNING CONSIDERATIONS	2041			*			
	LLL	LLL CALS	2230			*	2920		2105
	LLL	LLL SECTION CALS	2231	2231	2231	180	2230		2105,2110,2211,2221
	LLL	LLL TERF	2330			*	2920		2105
	LLL	LLL SECTION TERF	2331	2331	2331	180	2330		2105,2110,2311,2321
	LLL	LLL CHECK/MED THREAT TACTICS	2930	2930	2930	365	2231,2331,2911		2105,2110,2211,2221,2231,2911,2920
CAT	ASSAULT TRANSPORT TACTICS	3240	3240	3240	365	2930,3002,3003,8320		2911	
AIR DELIVERY STAGE (AD)									
AD	ACAD	CH-53 DM/GTR I (GTR)	2016			*			
	ACAD	IR SAM THREAT TO ASSAULT SUPPORT(*)	2017	2017	2017	365			
	ACAD	AAQ-24(*)	2019	2019	2019	365			
	ACAD	ADA THREAT TO ASSAULT SUPPORT	2020			*			
	ACAD	EVASIVE MANEUVERS	2021			*			
	SGTR	GTR & ASE FAM SIM	2500			*	2016,2017,2018,2019,2020,2021,2311		
	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	ACAD	CH-53 WEAPONS SYSTEMS AND TRAINING (AG)	2023			*			
	ACAD	WEAPONS EMPLOYMENT TECHNIQUES	2024			*			
	ACAD	INTRO TO LASER SYSTEMS AND SAFETY	2025			*			
	AG	AERIAL GUNNERY	2810			*	2023,2024,2025,2105		2105
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	OBJECTIVE AREA PLANNING(*) (TAC)	2027	2027	2027	365			
	ACAD	ROE	2028			*			
	ACAD	EXECUTION CHECKLIST	2029			*			
	ACAD	PROBLEM FRAMING(*)	2030	2030	2030	365			
	TAC	LOW THREAT LEVEL TACTICS	2910			*	2027,2028,2029,2030,2211,2311		2105,2110,2211
	TAC	MEDIUM THREAT LEVEL TACTICS	2911	2911	2911	365	2910		2105,2110,2211
	ACAD	HUMAN FACTORS	2037			*			
	ACAD	CH-53 AN AAQ-29 FLIR (LLL)	2039			*			

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
	ACAD	ASSAULT SUPPORT ESCORT TACTICS	2040			*			
	ACAD	BI AND ITG PLANNING CONSIDERATIONS	2041			*			
	LLL	LLL CALS	2230			*	2920		2105
	LLL	LLL SECTION CALS	2231	2231	2231	180	2230		2105,2110,2211,2221
	LLL	LLL TERF	2330			*	2920		2105
	LLL	LLL SECTION TERF	2331	2331	2331	180	2330		2105,2110,2311,2321
	LLL	LLL CHECK/MED THREAT TACTICS	2930	2930	2930	365	2231,2331,2911		2105,2110,2211,2221,2231,2911,2920
	ACAD	HEAVY LIFT OPERATIONS(*) (EXT)	2014	2014	2014	365			
	ACAD	ASSAULT SUPPORT TO ARTILLERY	2015			*			
	SEXT	HEAVY LIFT EXTERNALS SIM	2400	2400		*	1902,2101		
	EXT	SINGLE POINT EXTERNALS	2410	2410		485	2400,2014,2015,2210		2105
	EXT	DUAL POINT EXTERNALS	2411	2411	2411	365	2014,2210		2105,2410
	EXT	HLL SINGLE POINT EXTERNALS	2420	2420		485	2220,2410		2105,2410
	EXT	HLL DUAL POINT EXTERNALS	2421	2421	2421	180	2220,2411		2105,2410,2411,2420
	EXT	LLL EXTERNAL	2430	2430	2430	180	2230,2420,2421,2920		2105,2410,2411,2420,2421
	EXT	HEAVY LIFT EXTERNALS	2441	2441	2441	365	2310,2400,2410		2105,2410
	AD	AERIAL DELIVERY TACTICS	3340	3340	3340	365	2930,8321,8322,8323,8324,8325,8326		2911

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL STAGE (TRAP)									
TRAP	ACAD	PERSONNEL RECOVERY	3004			*			
	ACAD	CH-53 SPECIFIC TRAP TTPs	3005			*			
	ACAD	CH-53 DM/GTR I (GTR)	2016			*			
	ACAD	IR SAM THREAT TO ASSAULT SUPPORT(*)	2017	2017	2017	365			
	ACAD	AAQ-24(*)	2019	2019	2019	365			
	ACAD	ADA THREAT TO ASSAULT SUPPORT	2020			*			
	ACAD	EVASIVE MANEUVERS	2021			*			
	SGTR	GTR & ASE FAM SIM	2500			*	2016,2017,2018,2019,2020,2021,2311		
	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	ACAD	CH-53 WEAPONS SYSTEMS AND TRAINING (AG)	2023			*			
	ACAD	WEAPONS EMPLOYMENT TECHNIQUES	2024			*			
	ACAD	INTRO TO LASER SYSTEMS AND SAFETY	2025			*			
	AG	AERIAL GUNNERY	2810			*	2023,2024,2025,2105		2105
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	OBJECTIVE AREA PLANNING(*) (TAC)	2027	2027	2027	365			
	ACAD	ROE	2028			*			
	ACAD	EXECUTION CHECKLIST	2029			*			
	ACAD	PROBLEM FRAMING(*)	2030	2030	2030	365			
	TAC	LOW THREAT LEVEL TACTICS	2910			*	2027,2028,2029,2030,2211,2311		2105,2110,2211
	TAC	MEDIUM THREAT LEVEL TACTICS	2911	2911	2911	365	2910		2105,2110,2211
	ACAD	HUMAN FACTORS	2037			*			
	ACAD	CH-53 AN AAQ-29 FLIR (LLL)	2039			*			
	ACAD	ASSAULT SUPPORT ESCORT TACTICS	2040			*			
	ACAD	BI AMND ITG PLANNING CONSIDERATIONS	2041			*			
	LLL	LLL CALS	2230			*	2920		2105
	LLL	LLL SECTION CALS	2231	2231	2231	180	2230		2105,2110,2211,2221
	LLL	LLL TERF	2330			*	2920		2105
	LLL	LLL SECTION TERF	2331	2331	2331	180	2330		2105,2110,2311,2321
	LLL	LLL CHECK/MED THREAT TACTICS	2930	2930	2930	365	2231,2331,2911		2105,2110,2211,2221,2231,2911,2920
	ACAD	HEAVY LIFT OPERATIONS(*) (EXT)	2014	2014	2014	365			
	ACAD	ASSAULT SUPPORT TO ARTILLERY	2015			*			
	SEXT	HEAVY LIFT EXTERNALS SIM	2400	2400		*	1902,2101		
	EXT	SINGLE POINT EXTERNALS	2410	2410		485	2400,2014,2015,2210		2105
	EXT	DUAL POINT EXTERNALS	2411	2411	2411	365	2014,2210		2105,2410
	EXT	HLL SINGLE POINT EXTERNALS	2420	2420		485	2220,2410		2105,2410
	EXT	HLL DUAL POINT EXTERNALS	2421	2421	2421	180	2220,2411		2105,2410,2411,2420
	EXT	LLL EXTERNAL	2430	2430	2430	180	2230,2420,2421,2920		2105,2410,2411,2420,2421
	EXT	HEAVY LIFT EXTERNALS	2441	2441	2441	365	2310,2400,2410		2105,2410
	ACAD	HAAR(*) (AR)	2022	2022		365			
	SHAAR	DAY HAAR SIM	2600			*	2100,2022		
	SHAAR	NS HAAR SIM	2601			*	2600		
	HAAR	DAY HAAR LEFT HOSE PREFERRED	2610			*	2110,2600		
	HAAR	DAY HAAR LEFT & RIGHT HOSE	2611	2611	2611	180	2610		2105
	HAAR	NS HAAR	2640	2640	2640	180	2101,2120,2601,2611		2022,2105,2611
	TRAP	TRAP TACTICS	3440	3440	3440	365	2930,3004,3005,8340		2911
AIR EVACUATION STAGE (AE)									

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
AE	ACAD	CASEVAC	3006			*			
	ACAD	CIRCADIAN RHYTHM AND FATIGUE	3007			*			
	ACAD	INTRO TO NVG TACTICAL EMPLOYMENT	3008			*			
	ACAD	CH-53 DM/GTR I (GTR)	2016			*			
	ACAD	IR SAM THREAT TO ASSAULT SUPPORT(*)	2017	2017	2017	365			
	ACAD	AAQ-24(*)	2019	2019	2019	365			
	ACAD	ADA THREAT TO ASSAULT SUPPORT	2020			*			
	ACAD	EVASIVE MANEUVERS	2021			*			
	SGTR	GTR & ASE FAM SIM	2500			*	2016,2017,2018,2019,2020,2021,2311		
	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	ACAD	CH-53 WEAPONS SYSTEMS AND TRAINING (AG)	2023			*			
	ACAD	WEAPONS EMPLOYMENT TECHNIQUES	2024			*			
	ACAD	INTRO TO LASER SYSTEMS AND SAFETY	2025			*			
	AG	AERIAL GUNNERY	2810			*	2023,2024,2025,2105		2105
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	OBJECTIVE AREA PLANNING(*) (TAC)	2027	2027	2027	365			
	ACAD	ROE	2028			*			
	ACAD	EXECUTION CHECKLIST	2029			*			
	ACAD	PROBLEM FRAMING(*)	2030	2030	2030	365			
	TAC	LOW THREAT LEVEL TACTICS	2910			*	2027,2028,2029,2030,2211,2311		2105,2110,2211
	TAC	MEDIUM THREAT LEVEL TACTICS	2911	2911	2911	365	2910		2105,2110,2211
	ACAD	HUMAN FACTORS	2037			*			
	ACAD	CH-53 AN AAQ-29 FLIR (LLL)	2039			*			
	ACAD	ASSAULT SUPPORT ESCORT TACTICS	2040			*			
	ACAD	BI AMND ITG PLANNING CONSIDERATIONS	2041			*			
	LLL	LLL CALS	2230			*	2920		2105
	LLL	LLL SECTION CALS	2231	2231	2231	180	2230		2105,2110,2211,2221
	LLL	LLL TERF	2330			*	2920		2105
	LLL	LLL SECTION TERF	2331	2331	2331	180	2330		2105,2110,2311,2321
	LLL	LLL CHECK/MED THREAT TACTICS	2930	2930	2930	365	2231,2331,2911		2105,2110,2211,2221,2231,2911,2920
	AE	AERIAL EVACUATION TACTICS	3540	3540	3540	365	2930,3006,3007,3008,8350,8351		2911

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
4000 PHASE – CORE PLUS									
ACADEMIC STAGE (ACAD)									
ACAD	ACAD	RF SAM	4000			*			
	ACAD	DM GAME PLANNING	4001			*			
	ACAD	CH-53 DM/GTR II	4002			*			
	ACAD	HELICOPTER PS AND EM	4003			*			
	ACAD	FW THREAT TO ASSAULT SUPPORT	4004			*			
	ACAD	ATTACK HELO THREAT TO THE MAGTF	4005			*			
	ACAD	ADGR	4006			*			
	ACAD	URBAN OPERATIONS	4007			*			
	ACAD	CAS	4008			*			
	ACAD	AIR ASSAULT RAID PLANNING	4009			*			
	ACAD	MAGTF TARGETING AND FIRE SUPPORT PLANNING	4010			*			
	ACAD	RADAR PRINCIPLES	4012			*			
	ACAD	TBFDS	4011			*			
	ACAD	CH-53 AIR COMMAND AND CONTROL (AC2)	4013			*			
	ACAD	SHIPBOARD OPERATIONS	4014	4014		*			
HELICOPTER INSERTION & EXTRACTION TECHNIQUES STAGE (HIE)									
HIE	HIE	HELOCAST	4110	4110	4110	485	2311		2105
	HIE	FASTROPE/SPIE/RAPPEL	4140			*	2311		2105
	HIE	PARA OPS	4141			*	2311		2105
BATTLEFIELD ILLUMINATION STAGE (BI)									
BI	BI	BATTLEFIELD ILLUMINATION	4340			*	2920		2105
TERRAIN FLIGHT EXTERNALS STAGE (TERF EXT)									
EXT	SEXT	DAY TERF EXTERNALS	4412	4412		365	2210,2310,2410		2105
	SEXT	NS TERF EXTERNALS	4440	4440	4440	365	2320,2420,4412		2105,2420,4412
GROUND THREAT REACTION STAGE (GTR)									
GTR	ACAD	RF SAM	4000			*			
	GTR	RADAR GTR	4540	4540	4540	365	2311,2500,4000,4012		2105,2110,2311
DEFENSIVE MEASURES STAGE (DM)									
DM	ACAD	DM GAME PLANNING	4001			*			
	ACAD	CH-53 DM/GTR II	4002			*			
	ACAD	HELICOPTER PS AND EM	4003			*			
	ACAD	FW THREAT TO ASSAULT SUPPORT	4004			*			
	ACAD	ATTACK HELO THREAT TO THE MAGTF	4005			*			
	DM	RW DM	4510	4510	4510	365	2311,4001-4005		2105,2110,2311
	DM	FW DM	4511	4511	4511	365	2311,4001-4005		2105,2110,2311

CH-53E ATTAIN AND MAINTAIN MATRIX (2000-4000 Phase)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
CHEMICAL, BIOLOGICAL, RADIATION, AND NUCLEAR STAGE (CBRN)									
CBRN	SCBRN	CBRN FAM	4600			*	2105		
FIELD CARRIER LANDING PRACTICE (FCLP)									
FCLP	ACAD	SHIPBOARD OPERATIONS	4014	4014		*			
	SFCLP	SIM CQ	4700			*			
	FCLP	DAY FCLP	4710	4710	4710	365	2210,4700		2105
	FCLP	NS FCLP	4740	4740	4740	365	2220,4710		2105,4710
CARRIER QUALIFICATION STAGE (CQ)									
CQ	DAY CQ	DAY CQ	4711	4711	4711	365	4710		4710
	N CQ	UNASSISTED CQ	4741	4741	4741	365	4711		4711
	NS CQ	NS CQ	4742	4742	4742	365	4740,4711,2920		4710,4740,4711,4741
TACTICS STAGE (TAC)									
TAC	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	ADGR	4006			*			
	ACAD	URBAN OPERATIONS	4007			*			
	ACAD	CH-53 AC2	4013			*			
	TAC	DIV TACTICS	4940	4940	4940	365	2911		2105,2110,2211,2911
	TAC	URBAN TACTICS	4941	4941	4941	365	2911,4007		2105,2110,2211,2311,2911
	TAC	LONG RANGE TACTICS	4942	4942	4942	365	2911,4006		2105,2110,2211,2911
RIE STAGE									
RIE	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	CAS	4008			*			
	ACAD	AIR ASSAULT RAID PLANNING	4009			*			
	ACAD	MAGTF TARGETING AND FIRE SUPPORT PLANNING	4010			*			
	RIE	RIE TACTICS	4980	4980	4980	365	2930,4008,4009,4010		2105,2110,2211,2911
AVIATION DELIVERED GROUND REFUELING STAGE (ADGR)									
ADGR	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	ACAD	TBFDS	4011			*			
	ADGR	ADGR TACTICS	4981	4981	4981	365	2930,4011		2105,2110,2211,2911
SEA BASED OPERATIONS STAGE (SEA)									
SEA	GTR	NON RADAR GTR	2540	2540	2540	365	2311,2500		2105,2110,2311
	AG	NS GUNNERY	2840	2840	2840	365	2101,2810,2920		2105
	SEA	SEA BASED TACTICS	4982	4982	4982	365	2930,4710		2105,2110,2211,4710,2911

2.19 PREREQUISITE AND CHAINING (5000-8000 PHASE)

CH-53E T&R MATRIX (5000-8000 PHASE)											
SKILL	PREFIX	TRNG CODE	DESCRIPTION	CON	DEVICE	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
INSTRUCTOR TRAINING (5000 PHASE)											
ACADEMICS STAGE (ACAD)											
ACAD	ACAD	5000	INSTRUCTIONAL TECHNIQUES					*			
BASIC INSTRUCTOR STAGE (BIP)											
BIP	ACAD	5000	INSTRUCTIONAL TECHNIQUES		G			*			
	BIP	5100	BIP IUT FAM/CAL/INST	D	S/A	1		*	NSQ-LLL,Core & Mission Skill complete		
	BIP	5101	BIP IUT EXT/CQ	D	S/A	1		*	5100		
	BIP	5110	BIP CHECK	D	A	1		*	5101		
TERF INSTRUCTOR STAGE (TERFI)											
TERFI	TERFI	5200	TERFI UT 1 A/C TERF	D	A	1		*	2311		
	TERFI	5201	TERFI UT EXT	D	A	1		*	4412		
	TERFI	5202	TERFI CHECK	D	A	2		*	5200,5201		
AERIAL REFUELING INSTRUCTOR STAGE (ARI)											
ARI	ARI	5300	ARI UT DAY	D	A	1		*	2611		
	ARI	5301	ARI NIGHT CHECK	NS	A	1		*	2640		
TACTICAL SIMULATOR INSTRUCTOR STAGE (TSI)											
TSI	TSI	5410	TACTICAL SIMULATOR INSTRUCTOR	(NS)	S			*	IN BIP SYLLABUS		
	TSI	5411	TACTICAL SIMULATOR INSTRUCTOR CHECK	(NS)	S			*	5410		
DEFENSIVE MEASURES INSTRUCTOR STAGE (DMI)											
DMI	DMI	5700	2 V GROUND THREAT	D	A	2		*	2540,4540		
	DMI	5701	2 V FW/RW	D	A	2		*	4510,4511		
	DMI	5702	2 V FW/RW	D	A	2		*	5700,5701		
NIGHT SYSTEMS INSTRUCTOR STAGE (NSI)											
NSI	SNSI	5800	ANVIS HUD	NS	S/A			*			
	NSI	5801	NSI UT LOW WORK	NS	A	1		*	5800,2230		
	NSI	5802	NSI UT CALS/EXT	NS	A	1		*	5800,2430		
	NSI	5803	NSI UT TERF	NS	A	2		*	5800,2231,2331		
	NSI	5804	NSI UT TACEX	NS	A	2		*	5800,2930		
	NSI	5805	NSI CHECK	NS	A	2		*	5800,5801,5802,5803,5804		
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)											

CH-53E T&R MATRIX (5000-8000 PHASE)											
SKILL	PREFIX	TRNG CODE	DESCRIPTION	CON	DEVICE	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
ACADEMICS STAGE (ACAD)											
ACAD	ACAD	6010	TACTICAL FLIGHT BRIEFING		G			*			
	ACAD	6011	AMC		G			*			
	ACAD	6012	FUNCTIONAL CHECK FLIGHT READINGS		G			*			
	ACAD	6013	FUNCTIONAL CHECK FLIGHT SEMINAR		G			*			
NATOPS STAGE											
NATOPS	NATOPS	6000	NATOPS OPEN BOOK EXAM		G			365			
	NATOPS	6001	NATOPS CLOSED BOOK EXAM		G			365	6000		
	NATOPS	6002	NATOPS ORAL EXAM		G			365	6001		
	NATOPS	6004	MONTHLY EP EXAM		G			30			
	NATOPS	6100	NATOPS EVALUATION	(N)	S/A	1		365	6002		6002,6004
CREW RESOURCE MANAGEMENT STAGE (CRM)											
CRM	CRM	6003	CRM CLASS		ACAD			365			
	CRM	6101	PRACTICE CRM PRICIPLES	(N)	S/A	1		365	6003		
INSTRUMENT STAGE (INST)											
INST	INST	6005	INSTRUMENT GROUND SCHOOL		ACAD			365			
	INST	6006	WRITTEN INSTRUMENT EXAM		ACAD			365	6005		
	INST	6102	INSTRUMENT EVALUATION		S/A	1		365	6006		
HELICOPTER AIRCRAFT COMMANDER STAGE (HAC)											
HAC	HAC	6120	HAC REVIEW	D	A/S	1		*	NSQ-LLL, CORE AND MISSION SKILL COMPLETE	2000&3000 PHASE COMP, 450 FLT HRS	
	HAC	6121	NS HAC REVIEW	NS	A/S	1		*	NSQ-LLL, CORE AND MISSION SKILL COMPLETE	2000&3000 PHASE COMP, 450 FLT HRS	
	HAC	6122	DAY INTO NIGHT HAC EVALUATION	(N)	A	1		*	5110,6120,6121,6001		
SECTION LEADER STAGE (SL)											
SL	SL	6200	DAY OR NIGHT CORE SKILL SL REVIEW	(NS)	A/S	2	X	*	8630,8660,6122	3 FLTS AS WINGMAN	
	SL	6201	MCT BASED TACTICAL SCENARIO	(NS)	A/S	2	X	*	8630,8660,6122	3 FLTS AS WINGMAN	
	SL	6202	DAY OR NIGHT CORE SKILL SL REVIEW	(NS)	A/S	2	X	*	8630,8660,6122	3 FLTS AS WINGMAN	
	SL	6203	NIGHT SL EVAL W FLSE	NS	A	2		*	6200,6201,6202	25 HAC HRS	

CH-53E T&R MATRIX (5000-8000 PHASE)											
SKILL	PREFIX	TRNG CODE	DESCRIPTION	CON	DEVICE	#	TEN +	REFLY	PREREQUISITE	PREREQUISITE NOTES	CHAINING
DIVISION LEADER STAGE (DL)											
DL	DL	6300	DAY OR NIGHT CORE SKILL DL REVIEW	(NS)	A/S	3+	X	*	8640,8641,6203	3 FLIGHTS AS SL,	
	DL	6301	MCT BASED TACTICAL SCENARIO	(NS)	A/S	3+	X	*	8640,8641,6203	3 FLIGHTS AS SL,	
	DL	6302	DL EVALUATION W FLSE	(NS)	A	3+		*	6300,6301	600 FLT HRS, 200 HRS IN TYPE, 50 HRS IN MODEL	
FLIGHT LEADER STAGE (FL)											
FL	FL	6400	FLIGHT LEADER EVAL W FLSE	(NS)	A	5+		*	6010,8620,6302	3 FLIGHTS AS DL, 700 FLT HRS	
AIR MISSION COMMANDER STAGE (AMC)											
AMC	AMC	6500	AMC EVAL W FLSE	(NS)	A/G	5+		*	6011,6400		
FUNCTIONAL CHECK PILOT STAGE (FCP)											
FCP	FCP	6600	FCP OPEN BOOK EXAM		G			*			
	FCP	6610	INTRO AFCS	D	S/A	1		*	6012,6013	25 HAC HOURS	
	FCP	6611	REVIEW AFCS	D	A	1		*	6610		
	FCP	6612	INTRO MECH FLIGHT CONTROL	D	S/A	1		*	6012,6013	25 HAC HOURS	
	FCP	6613	REV MECH FLIGHT CONTROL	D	A	1		*	6612		
	FCP	6614	INTRO ENGINES	D	S/A	1		*	6012,6013	25 HAC HOURS	
	FCP	6615	REV ENGINES	D	A	1		*	6614		
	FCP	6616	INTRO FULL FCF CARD	D	S/A	1		*	6610,6612,6614		
	FCP	6617	FCP EVAL	D	A/S	1		*	6600,6611,6613,6615,6616	50 HAC HOURS	
	FCP	6618	FCPI/AFCPi EVAL	D	S/A	1		365	6013,6617		
7000 PHASE - EVALUATION											
MET	CAT	7001	COMBAT ASSAULT TRANS	(NS)	A	2+		730	3240		3240
	AD	7002	AERIAL DELIVERY	(NS)	A	2+		730	3340		3340
	TRAP	7003	TRAP	(NS)	A	2+		730	3440		3440
	AE	7004	AIR EVACUATION	(NS)	A	2+		730	3540		3540
	RIE	7005	RAPID INSERTION/EXTRACTION	(NS)	A	2+		730	4980		4980
	ADGR	7006	AVIATION DELIVERED GROUND REFUELING	(NS)	A	2+		730	4981		4981
	SEA	7007	SEA BASED TACTICS	(NS)	A	2+		730	4982		4982

2.20 AVIATION CAREER PROGRESSION MODEL (ACPM)

CH-53E T&R MATRIX (8000 PHASE)									
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC POI	#	ACAD	DEVICE	REFLY	EVENT CONV
AVIATION CAREER PROGRESSION MODEL (ACPM)									
ACPM	ACPM	8200	MACCS AGENCIES, FUNCTIONS AND CONTROL OF AIRCRAFT AND MISSILES	X		0.6	G	*	8200
	ACPM	8201	MWCS BRIEF	X		0.4	G	*	8201
	ACPM	8202	ACA AND AIRSPACE	X		0.5	G	*	8202
	ACPM	8210	AVIATION GROUND SUPPORT	X		0.6	G	*	8210
	ACPM	8230	ACE BATTLESTAFF	X		0.6	G	*	8230
	ACPM	8231	BATTLE COMMAND DISPLAY	X		0.3	G	*	8231
	ACPM	8240	SIX FUNCTIONS OF MARINE AVIATION	X		1.3	G	*	8240
	ACPM	8241	JTAR/ASR INTRODUCTION AND PRACTICAL APPLICATION CLASS	X		0.5	G	*	8241
	ACPM	8242	SITE COMMAND PRIMER	X		0.7	G	*	8242
	ACPM	8250	THEATER AIR GROUND SYSTEM (TAGS)	X		0.6	G	*	8250
	ACPM	8300	AIR DEFENSE	X		0.6	G	*	8300
	ACPM	8310	FORWARD ARMING AND REFUELING POINT (FARP) OPERATIONS	X		0.4	G	*	8310
	ACPM	8311	MARINE CORPS TACTICAL FUEL SYSTEMS	X		0.2	G	*	8311
	ACPM	8320	JOINT STRUCTURE & JOINT AIR OPERATIONS	X		1.3	G	*	8320
	ACPM	8321	JOINT AIR TASKING CYCLE PHASE 1: STRATEGY DEVELOPMENT	X		0.3	G	*	8321
	ACPM	8322	JOINT AIR TASKING CYCLE PHASE 2: TARGET DEVELOPMENT	X		0.2	G	*	8322
	ACPM	8323	JOINT AIR TASKING CYCLE PHASE 3: WEAPONING AND ALLOCATION	X		0.2	G	*	8323
	ACPM	8324	JOINT AIR TASKING CYCLE PHASE 4: JOINT ATO PRODUCTION	X		0.2	G	*	8324
	ACPM	8325	JOINT AIR TASKING CYCLE PHASE 5:	X		0.2	G	*	8325
	ACPM	8326	JOINT AIR TASKING CYCLE PHASE 6: COMBAT ASSESMENT	X		0.2	G	*	8326
	ACPM	8340	INTEGRATING FIRES AND AIRSPACE WITHIN THE MAGTF	X		0.5	G	*	8340
	ACPM	8350	PHASING CONTROL ASHORE	X		0.5	G	*	8350
	ACPM	8351	TACRON ORGANIZATIONS AND FUNCTIONS	X		TBD	G	*	8351
	ACPM	8630	TACTICAL AIR COMMAND CENTER (TACC)	X		0.7	G	*	8630
	ACPM	8660	JOINT OPS INTRO	X		0.4	G	*	8660
	ACPM	8640	JOINT DATA NETWORK	X		0.4	G	*	8640
	ACPM	8641	MAGTF THEATER	X		1.5	G	*	8641
	ACPM	8620	ESG/CSG INTEGRATION	X		TBD	G	*	8620
TOTAL ACPM					26	13.9			

CHAPTER 4
CH-53 AERIAL GUNNER/ OBSERVER (MOS 6199)

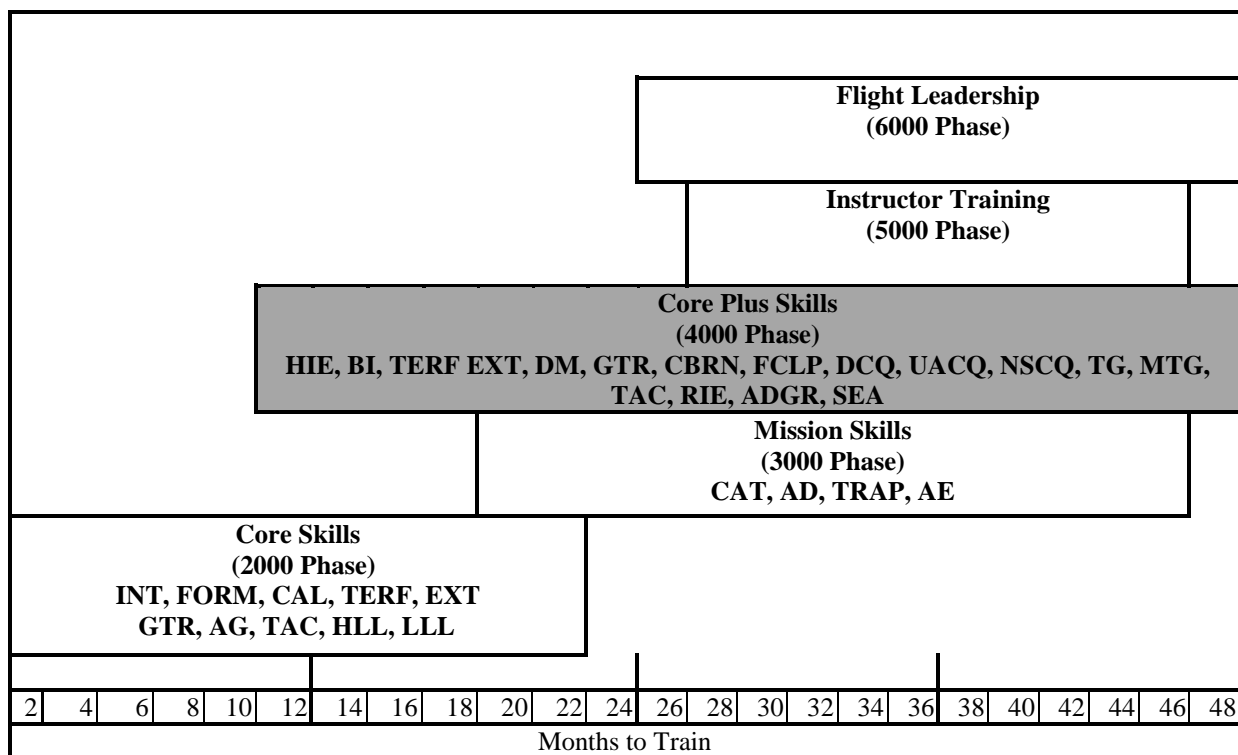
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CHAPTER 4
CH-53E AERIAL OBSERVER (MOS 6199)

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-53E AG/O Basic POI		
Months	Phase of Instruction	Unit
22	Core Skill Training	Tactical Squadron
28	Mission Skill Training	Tactical Squadron
38+	Core Plus Training	Tactical Squadron

4.2.3 Refresher POI

CH-53E AG/O Refresher POI		
Months	Phase of Instruction	Unit
3	Core Skill Training	Tactical Squadron
6	Mission Skill Training	Tactical Squadron
13+	Core Plus 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 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 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 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/PPP 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, and DM).

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 REQUIREMENT, CERTIFICATION, QUALIFICATION, AND DEIGNATION 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.

4.4.1 Individual Qualification Requirements

CH-53E 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

4.4.2 Individual Designation Requirements

INDIVIDUAL DESIGNATION REQUIREMENTS	
Designation	Event Requirements
AG/O CH-53E	2100, 2101, 2105, 2106, 2110, 2120, 2210, 2211, 2220, 2221, 2310, 2311, 2320, 2321, 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 Manual
A1-H53BE-NFM-000	CH-53E 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-H53BE-CLG-000	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/PPP 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 (TERFQ, AGO, DCQ, NSCQ, UACQ, NSQ HLL, NSQ LLL, TGO, 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 maintained by MAWTS-1 and are located at the following link:

<https://mceits.usmc.mil/sites/mawts1/SitePages/CH-53.aspx>

Scroll down to the “CH-53 Library”, click on “Pilot Training Officer References” > “APR and ATF Product Templates” > “Crew Chief Aircrew Training Forms”.

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.

4.6 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.

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, 2105, 2106, 2110, 2120, 2210, 2211, 2220, 2221, 2310, 2311, 2320, 2321, 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.

4.7 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) CH-53 Internal Cargo Operations
ACAD-2004	1.0	*	B		G		(S) AAR47 / ALE47
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
ACAD-3005	1.0	*	B		G		(S) CH-53 TRAP/TIPS
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 Battlefield Illumination

4.8 CORE PHASE (2000). For Individual T&R events refer to Chapter 3 of this manual.

4.9 MISSION PHASE (3000). For Individual T&R events refer to Chapter 3 of this manual.

4.10 CORE PLUS PHASE (4000). For Individual T&R events refer to Chapter 3 of this manual.

4.11 INSTRUCTOR TRAINING PHASE (5000). Not applicable to AG/Os unless otherwise stated in the MAWTS-1 Course Catalog.

4.12 REQUIREMENTS, QUALIFICATIONS, CERTIFICATIONS AND DESIGNATIONS (RQCD) PHASE (6000). For Individual T&R events refer to Chapter 3 of this manual

4.13 CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
CORE PHASE (2000)								
ACADEMICS (ACAD)								
	ACAD	CH53 CARGO OPERATIONS	2003			*		
	ACAD	AAR/ALE 47	2004			*		
	ACAD	APR-39	2012			*		
	ACAD	AAQ-24	2019			*		
	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	CARGO	2105	2105	2105	365	2003,2050,2052~N,2100	
	INT	PAX	2106	2106	2106	365	2003,2050,2052~N,2101	
FORMATION (FORM)								
FORM	FORM	DAY FORM	2110	2110	2110	365	2050	
CONFINED AREA LANDING (CAL)								
CAL	CAL	CALS	2210			*	2050	
	CAL	SECTION CALS	2211	2211	2211	365	2110,2210	2110
TERRAIN FLIGHT (TERF)								
TERF	TERF	TERF	2310			*	2050,2051	
	TERF	SECTION TERF	2311	2311	2311	365	2110,2310	2110,2310
EXTERNAL (EXT)								
EXT	EXT	SINGLE POINT	2410			*	2210	2210
	EXT	DUAL POINT	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	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
GROUND THREAT REACTION (GTR)								
GTR	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,2320~HLL,2321~HLL,2330~LLL,2331~LLL
AERIAL GUNNERY GAU-21 (AG)								
AG	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813	2813	180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	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)								
NS HLL	HLL	HLL FORM	2120	2120	2120	180	2052,2110	2110
	HLL	HLL CALS	2220			*	2052,2210	2210
	HLL	HLL SEC CALS	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	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)								
NS LLL	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
MISSION PHASE (3000)								
ACADEMICS (ACAD)								
	ACAD	NEO EXECUTION	3002			*		
	ACAD	PERSONNEL RECOVERY	3004			*		
	ACAD	CH-53 TRAP TTPS	3005			*		
	ACAD	CASEVAC	3006			*		

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
COMBAT ASSAULT TRANSPORT (CAT)								
CAT	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
CAT	ACAD	NEO EXECUTION	3002					
	CAT	CBT ASLT TRNSPT	3240	3240	3240	365	NSQ LLL, AGQ,2540, 3002	
AERIAL DELIVERY (AD)								
AD	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	EXT	SINGLE POINT	2410			*	2210	2210
	EXT	DUAL POINT	2411	2411		365	2210	2210,2410
	EXT	HLL SINGLE POINT	2420			*	2220,2410	2210,2220,2410

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
	EXT	HLL DUAL POINT	2421	2421	2421	180	2220,2411	2210,2220,2410,2411,2420
	EXT	LLL EXTERNALS	2430	2430	2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	AD	AERIAL DELVIERY	3340	3340	3340	365	NSQ LLL, AGQ,2430,2540	
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)								
TRAP	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	EXT	SINGLE POINT	2410			*	2210	2210
	EXT	DUAL POINT	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	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	ACAD	PERSONNEL RECOVERY	3004			*		
	ACAD	CH-53 TRAP TTPS	3005			*		
	TRAP	TRAP	3440	3440	3440	365	NSQ LLL, AGQ,3004,3005,2540	

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
AERIAL EVACUATION (AE)								
AE	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052,2311,2321~NS,2331	2110,2310,2311,HLL~2320,HLL~2321,LLL~2330,LLL~2331
	AG	GAU-21 LAB	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801			*	2056,2057,2800	
	AG	WEAPONS PRO LAB	2802			*	2801	
	AG	DAY AG	2812			*	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		180	2311,2812	2812
	AG	NIGHT AG	2842			*	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843	2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
	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
	LLL	LLL CALS	2230			*	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231	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	180	2330	2110,2120,2310,2311,2320,2321,2330
	LLL	LLL MED THREAT	2930	2930	2930	365	2231,2331	2105,2106,2110,2120,2210,2211,2220,2221,2230,2231,2910,2911,2920
	ACAD	(U) CASEVAC	3006			*		
	AE	AERIAL EVACUATION	3540	3540	3540	365	NSQ LLL, AGQ,3006,2540	
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 BATTLE FIELD I	4300			*		
HELICOPTER INSERTION & EXTRACTION (HIE)								
HIE	HIE	HELOCAST	4110	4110	4110	485	TERFQ,2106	2106
	HIE	RAPPEL	4140			*	2210,2920~NS,2930~LLL	2106
	HIE	PARA/OPS	4141			*	2920~NS,2930~LLL	2106

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
BATTLEFIELD ILLUMINATION (BI)								
BI	BI	BATTLEFIELD ILLUM	4340	4340	4340	*	NSQ-LLL, AGQ	
TERRAIN FLIGHT EXTERNALS (TERF EXT)								
EXT	TERF EXT	DAY TERF EXTERNALS	4412			*	2310,2410~SINGLE POINT,2411~DUAL POINT – 2310	2310,2410~SINGLE POINT,2411~DUAL POINT – 2310 is the only event automated in M-SHARP.
	TERF EXT	NS TERF EXTERNALS	4440	4440	4440	365	2320~NS,2420~NS,2330~LLL,2430~LLL,	4412
DEFENSIVE MEASURES (DM)								
DM	DM	RW DM	4510	4510	4510	365	TERFQ,2004,2019,4051,4052	2110,2310,2311
	DM	FW DM	4511	4511	4511	365	TERFQ,2004,2019,4051,4052	2110,2310,2311
GROUND THREAT REACTIONS (GTR)								
GTR	GTR	RADAR GTR	4540	4540	4540	365	2004,2019,4051,4052,2311,2321~NS,2331~LLL	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	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	180	4810	2812,2813
	TG	NIGHT SECTION TG	4840	4840	4840	180	4811	2812,2813,2842,2843,4810,4811
MOVING TARGET GUNNERY (MTG)								
MTG	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 (only 2812 and 2842 will be automated in M-SHARP.
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	365	2920~HLL,2930~LLL	2110,2120,2210,2211,2220~HLL,2221~HLL,2910,2911,2920~HLL,2230~LLL,2231~LLL,2930~LLL

CH-53E AERIAL OBSERVER / GUNNER ATTAIN AND MAINTAIN TABLE (2000, 3000, 4000, & 6000 PHASE)								
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
RAPID INSERT/EXTRACTION (RIE)								
RIE	GTR	NON RADAR GTR	2540	2540	2540	365	2004,2019,4051,4052, 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	2004,2019,4051,4052, 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	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	2004,2019,4051,4052, 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	365		
	NTPS	CLOSED BOOK EXAM	6001	6001	6001	365	6000	
	NTPS	ORAL EXAM	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	365	6002	
CRM								
CRM	CRM	CRM GRND CLASS	6003	6003	6003	365		
	CRM	CRM FLT	6101	6101	6101	365	6003	

4.14 CH-53 AERIAL OBSERVER / GUNNER T&R MATRIX (2000-6000 PHASE)

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
CORE PHASE (2000)																		
ACADEMICS (ACAD)																		
	ACAD	2003	(U) CH53 CARGO OPERTAIONS	X				1.0						G		*		
	ACAD	2004	(S) AAR / ALE 47	X				1.0						G		*		2004
	ACAD	2012	(S) APR-39	X				1.0						G		*		2012
	ACAD	2019	(S) AAQ-24	X				1.0						G		*		2019
	ACAD	2050	(U) EA TAC AIRCREW CON	X				1.0						G		*		2050
	ACAD	2051	(U) EA TERF	X				1.0						G		*		2051
	ACAD	2052	(U) EA NS TRAINING	X				1.0						G		*		2052
	ACAD	2053	(U) EA AERIAL GUNNERY	X				1.0						G		*		2053
	ACAD	2055	(U) EA GAU-21	X				1.0						G		*		2055
	ACAD	2056	(U) EA LASER AIMING	X				1.0						G		*		2056
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					0.0				(N)	A/S	1	*		2100
	INT	2101	PAX LAB	X					0.0				(N)	A	1	*		2101
	INT	2105	CARGO	X	X	X					1.5	(NS)	A	1	365		2105	
	INT	2106	PAX	X	X	X					1.5	(NS)	A	1	365		2106	
INT TOTAL							1	1.0	2	0.0	2	3.0						
FORMATION (FORM)																		
FORM	FORM	2110	DAY FORM	X	X	X					1.5	D	A	2	365		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					1.5	D	A	2	365		2211	
CAL TOTAL							0	0.0	0	0.0	2	3.0						

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
TERRAIN FLIGHT (TERF)																		
TERF	TERF	2310	TERF	X								1.5	D	A/S	1	*		2310
	ACAD	2051	(U) EA TERF	X														
	TERF	2311	SECTION TERF	X	X	X						1.5	D	A	2	365		2311
TERF TOTAL							0	0.0	0	0.0	2	3.0						
EXTERNAL (EXT)																		
EXT	EXT	2410	SINGLE POINT	X								1.5	D	A	1	*		2410
	EXT	2411	DUAL POINT	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						1.5	LLL	A	1	180		2430
EXT TOTAL							0	0.0	0	0.0	5	7.5						
GROUND THREAT REACTION (GTR)																		
GTR	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A/S	2	365		2540
	ACAD	2004	(S) AAR / ALE 47	X														
	ACAD	2012	(S) APR-39	X														
	ACAD	2019	(S) AAQ-24	X														
GTR TOTAL							0	0.0	0	0.0	1	1.5						
AERIAL GUNNERY GAU-21 (AG)																		
AG	AG	2800	GAU-21 LAB	X				3.0					D	G		*		2800
	ACAD	2053	(U) EA AERIAL GUNNERY	X														
	ACAD	2055	(U) EA GAU-21	X														
	ACAD	2056	(U) EA LASER AIMING	X														
	AG	2801	GAU-21 MWPC LAB	X				2.0					D	G		*		2801
	AG	2802	WEAPON PROCEDURES LAB	X				2.0					D	S/A		*		2802
	AG	2812	DAY AG	X								1.5	D	A	1	*		2812
	AG	2813	DAY SEC AG	X	X	X						1.5	D	A	2+	180		2813
	AG	2842	NIGHT AG	X								1.5	NS	A	1	*		2842
	AG	2843	NIGHT SEC AG	X	X	X						1.5	NS	A	2+	180		2843
AG TOTAL							3	7.0	0	0.0	4	6.0						
TACTICS (TAC)																		

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
TAC	TAC	2910	DAY LOW THREAT	X								2.0	D	A	2	*		2910
	ACAD	2050	(U) EA TAC AIRCREW CON	X														
	ACAD	2058	(U) EA ESCORT OPERATIONS	X														
	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						
CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)																		
NS HLL	HLL	2120	HLL FORM	X	X	X						1.5	HLL	A	2	180		2120
	ACAD	2052	(U) EA NS TRAINING	X														
	HLL	2220	HLL CALS	X								1.5	HLL	A	1	*		2220
	HLL	2221	HLL SEC CALS	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						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	0.0	0	0.0	6	9.5						
NIGHT SYSTEM LOW LIGH LEVEL (LLL)																		
NS LLL	LLL	2230	LLL CALS	X								1.5	LLL	A	1	*		2230
	LLL	2231	LLL SEC CALS	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						1.5	LLL	A	2	180		2331
	LLL	2930	LLL MED THREAT	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							15	19.0	2	0.0	30	47.0						
MISSION PHASE (3000)																		
ACADEMICS (ACAD)																		
	ACAD	3002	(U) NEO EXECUTION	X				1.5						G		*		3002
	ACAD	3004	(S) PERSONNEL RECOVERY	X				1.0						G		*		3004

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
	ACAD	3005	(S) CH53 SPECIFIC TRAP TTPS	X				0.8						G		*		3005
	ACAD	3006	(U) CASEVAC	X				0.5						G		*		3006
ACAD TOTAL							4	3.8	0	0.0	0	0.0						
CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
	COMBAT ASSAULT TRANSPORT (CAT)																	
	CAT	GTR CSP		2540														
AG CSP			2800,2801,2802,2812,2813,2842,2843															
LLL CSP			2230,2231,2330,2331,2930															
TAC CSP			2910,2911															
ACAD		3002	NEO EXECUTION	X				1.5						G		*		3002
CAT		3240	CMBT ASSAULT TRANSPORT	X	X	X						2.0	(NS)	A	1+	365		3240
AT TOTAL							1	1.5	0	0.0	1	2.0						
AERIAL DELIVERY (AD)																		
AD	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	EXT CSP		2410,2411,2420,2421,2430															
	AD	3340	AERIAL DELVIERY	X	X	X						2.0	(NS)	A	1+	365		3340
AD TOTAL							0	0.0	0	0.0	1	2.0						

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)																		
TRAP	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	EXT CSP		2410,2411,2420,2421,2430															
	ACAD	3004	(S) PERSONNEL RECOVERY	X				1.0						G		*		3004
	ACAD	3005	(S) CH53 SPECIFIC TRAP TTPS	X				0.8						G		*		3005
	TRAP	3440	TRAP	X	X	X						2.0	(NS)	A	1+	365		3440
TRAP TOTAL							2	1.8	0	0.0	1	2.0						
CH-53E AERIAL OBSERVER / GUNNER T&R MATRIX (2000-6000 PHASE)																		
AERIAL EVACUATION (AE)																		
AE	GTR CSP		2540															
	AG CSP		2800,2801,2802,2812,2813,2842,2843															
	LLL CSP		2230,2231,2330,2331,2930															
	TAC CSP		2910,2911															
	ACAD	3006	(U) CASEVAC	X				0.5						G		*		3006
	AE	3540	AERIAL EVACUATION	X	X	X						2.0	(NS)	A	1+	365		3540
AE TOTAL							1	0.5	0	0.0	1	2.0						
TOTAL MISSION PHASE								3.8	0	0.0	5	10.0						
CORE PLUS PHASE (4000)																		
ACADEMICS (ACAD)																		
	ACAD	4011	(U) EA ADGR	X				1.0						G		*		4011
	ACAD	4050	(U) EA ELECT WARFARE	X				1.0						G		*		4050
	ACAD	4051	(U) EA DM/GTR PART 1	X				1.0						G		*		4051
	ACAD	4052	(U) EA DM/GTR PART 2	X				1.0						G		*		4052
	ACAD	4053	TRAINING THE TAIL GUNNER	X				1.0						G		*		4053
ACAD TOTAL							5	5.0	0	0.0	0	0.0						

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
HELICOPTER INSERTION & EXTRACTION (HIE)																		
HIE	HIE	4110	HELOCAST	X	X	X						1.5	D	A	1	485		4110
	HIE	4140	RAPPEL	X								1.5	(NS)	A	1	*		4140
	HIE	4141	PARA/OPS	X								1.5	(NS)	A	1	*		4141
HIE TOTAL							0	0.0	0	0.0	3	4.5						
BATTLEFIELD ILLUMINATION (BI)																		
BI	BI	4340	BATTLEFIELD ILLUMINATION	X	X	X						1.5	NS	A	1	1095		4340
TERRAIN FLIGHT EXTERNALS (TERF EXT)																		
EXT	TERF EXT	4412	DAY TERF EXTERNALS	X								1.5	D	A/S	1	*		4412
	TERF EXT	4440	NS TERF EXTERNALS	X	X	X						1.5	NS	A	1	365		4440
TERF EXT TOTAL							0	0.0	0	0.0	2	3.0						
DEFENSIVE MEASURES (DM)																		
DM	DM	4510	RW DM	X	X	X						1.5	D	A	2	365		4510
	ACAD	4050	(U) EA ELECT WARFARE	X														
	ACAD	4051	(U) EA DM/GTR PART 1	X														
	ACAD	4052	(U) EA DM/GTR PART 2	X														
	DM	4511	FW DM	X	X	X						1.5	D	A	2	365		4511
DN TOTAL							0	0.0	0	0.0	2	3.0						
GROUND THREAT REACTIONS (GTR)																		
GTR	GTR	4540	RADAR GTR	X	X	X						1.5	(NS)	A	2	365		4540
GTR TOTAL							0	0.0	0	0.0	1	1.5						
CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)																		
CBRN	CBRN	4600	CBRN	X	X	X				1.5			(NS)	S/A		1095		4600
CBRN TOTAL							0	0.0	1	1.5	0	0.0						
FIELD CARRIER LANDING PRACTICE (FCLP)																		
FCLP	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	0	0.0	2	3.0						

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
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						
TAIL GUNNERY (TG)																		
TG	TG	4800	STATIC TG TRAINING	X				1.5					D	S/A	1	*		4800
	ACAD	4053	TRAINING THE TAIL GUNNER	X														
	TG	4810	DAY TG	X							1.5	D	A	1	*		4810	
	TG	4811	DAY SECTION TG	X	X	X					1.5	D	A	2	180		4811	
	TG	4840	NIGHT SECTION TG	X	X	X					1.5	NS	A	2	180		4840	
TG TOTAL							1	1.5	0	0.0	3	4.5						
MOVING TARGET GUNNERY (MTG)																		
MTG	MTG	4841	MTG	X							1.5	(NS)	A/S	1+	*		4841	
MTG TOTAL							0	0.0	0	0.0	1	1.5						
TACTICS (TAC)																		
TAC	TAC	4940	DIV TAC	X	X	X					2.0	(NS)	A	3+	365		4940	
	TAC	4941	URBAN TAC	X	X	X					2.0	(NS)	A	2	365		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	
	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	3	5.0						

CH-53E AERIAL OBSERVER / GUNNER 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	M	#	ACAD	#	SIM	#	FLT						
ADGR																		
ADGR	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A/S	2	365		2540
	ACAD	4011	(U) EA ADGR	X														
	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	4	6.5						
EXPEDITIONARY SEA BASED (SEA)																		
SEA	GTR	2540	NON RADAR GTR	X	X	X						1.5	(NS)	A/S	2	365		2540
	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	3	5.0						
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RCQD)																		
NATOPS (NTPS)																		
NTPS	NTPS	6000	OPEN BOOK EXAM	X	X	X		3.0						G		365	X	6000
	NTPS	6001	CLOSED BOOK EXAM	X	X	X		1.0						G		365	X	6001
	NTPS	6002	ORAL EXAM	X	X	X		2.0						G		365	X	6002
	NTPS	6004	MONTHLY EP QUIZ	X	X	X		1.0						G		30	X	
	NTPS	6005	QUARTERLY EP EVALUATION	X	X	X		1.0						A/S		90	X	
	NTPS	6100	NATOPS EVALUATION FLIGHT	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		1.5						G		365	X	6003
	CRM	6101	CRM FLT	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	1	*		6601
	FCF	6602	VERIFY ASM QUALS	X				.5					D	G		*		6602
	FCF	6610	FCF EVALUATION FLIGHT	X	X							1.5	D	A	1	1095		6610
FCF TOTALS							2	2.0	0	0.0	1	1.5						

4.15 AIRCREW PERFORMANCE RECORD/ QUALIFICATION JACKET ACEDOMIC TRACKER (2000-4000)

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-2004	(S) AAR/ALE-47			
ACAD-2012	(S) APR-39			
ACAD-2019	(S) AAQ-24			
ACAD-2050	(U) EA Tactical AC considerations & responsibility			
ACAD-2051	(U) EA Terrain flight for enlisted aircrew			
ACAD-2052	(U) EA Night vision training			
ACAD-2053	(U) EA Fundamentals of aerial gunnery			
ACAD-2055	(U) EA GAU-21 .50 caliber machine gun			
ACAD-2056	(U) EA Laser aiming devices			
ACAD-2058	(U) EA Basic principles of Escort operations			
MISSION SKILL PHASE (3000)				
ACAD-3002	(U) NEO EXECUTION			
ACAD-3004	(S) PERSONNEL RECOVERY			
ACAD-3005	(S) CH53 SPECIFIC TRAP TTPS			
ACAD-3006	(U) CASEVAC			
CORE PLUS SKILL PHASE (4000)				
ACAD-4011	(U) EA Aviation Delivered Ground Refueling TBFDS (CH-53E)			
ACAD-4050	(U) EA Basic principles of Electronic Warfare			
ACAD-4051	(U) EA Defensive Measures			
ACAD-4052	(U) EA Defensive Measures part 2 (CH-53)			
ACAD-4053	(U) EA Training the Tail Gunner			
ACAD-4300	(U) EA Battle Field Illumination			