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Subj: CH-53E TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14C

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

1. Purpose. In accordance with reference (a), this Training and Readiness (T&R) Manual, contained in enclosure (1), contains revised standards and regulations regarding the training of CH-53E aircrew.

2. Cancellation. NAVMC 3500.47A

3. Scope. Highlights of major T&R planning considerations included in this CH-53E T&R Manual are as follows:

a. A new Aerial Observer chapter has been added, composed of Programs of Instruction (POI) extracted from the Crew Chief chapter.

b. The CH-53D POI has been deleted.

c. Some events in the 2000 Phase have been moved into the 3000 and 4000 Phases in order to provide a more accurate measure of proficiency in the required skill sets to accomplish the assigned Mission Essential Task(s).

d. Addition of a new table - Core Model Training Standard; applies to the optimum training proficiency for Core, Mission, Core Plus skills, and Instructor Training.

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

4. Information. Recommended changes to this manual should be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General (CG), Training and Education Command (TECOM), Marine Air Ground Task Force Training and Education Standards Division (MTESD), Aviation Standards Branch, Quantico, Virginia 22134 using standard Naval correspondence or the Automated Message Handling System plain language address: CG TECOM MTESD.

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

6. Certification. Reviewed and approved this date.

T. M. MURRAY
By direction

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CHAPTER 1

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

1.1 HMH 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 HMHT-302. Conduct Core Skill Introduction assault support heavy lift helicopter training for selected aircrews in the CH-53E aircraft and provide technical training for aviation maintenance personnel.

1.2 HMH TABLE OF ORGANIZATION (T/O). Refer to Table of Organization 8960 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 Squadron is authorized:

HMH Squadron Table of Organization					
Unit	Squadron	Squadron (-)	Detachment	Reserve	HMHT-302
Aircraft	16	12	4	8	17
Pilots	38	30	8	19	24**
Crew Chiefs	26	20	6	13	11**/24
AO/AG*	26	20	6	13	24
*Aerial Observer / Aerial Gunner					
** 24 Instructor Pilots // 11 Crew Chief Instructors of 24 Crew Chiefs total					

1.3 SIX FUNCTIONS OF MARINE AVIATION

SIX FUNCTIONS OF MARINE AVIATION		
FUNCTION	**ABBREVIATION**	**DESCRIPTION**
Offensive Air Support	**OAS**	OAS involves air operations that are conducted against enemy installations, facilities, and personnel in order to directly assist in the attainment of MAGTF objectives by destroying enemy resources or isolating enemy military forces. Its primary support of the warfighting functions is to provide fires and force protection through CAS and DAS.
Assault Support	**ASPT**	ASPT contributes to the warfighting functions of maneuver and logistics. Maneuver warfare demands rapid, flexible maneuverability to achieve a decision. Assault support uses aircraft to provide tactical mobility and logistic support to the MAGTF for the movement of high priority personnel and cargo within the immediate area of operations (or the evacuation of personnel and cargo).
Anti-Air Warfare	**AAW**	AAW is the actions used to destroy or reduce the enemy air and missile threat to an acceptable level The primary purpose of AAW is to gain and maintain whatever degree of air superiority is required; this permits the conduct of operations without prohibitive interference by opposing air and missile forces. AAW's other purpose is force protection.

Electronic Warfare	**EW**	EW is any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. EW supports the warfighting functions of fires, command and control, and intelligence through the three major subdivisions: electronic attack, electronic protection, and electronic warfare support.
Control of Aircraft & Missiles	**CoA&M**	The control of aircraft and missiles supports the warfighting function of Command and Control. The ACE commander maintains centralized command, while control is decentralized and executed through the Marine Air Command and Control System (MACCS). CoA&M integrates the other five functions of Marine Aviation by providing the commander with the ability to exercise Command and Control authority over Marine Aviation assets.
Aerial Reconnaissance	**AerRec**	AerRec employs visual observation and/or sensors in aerial vehicles to acquire intelligence information. It supports the intelligence warfighting function and is employed tactically, operationally, and strategically. The three types of air reconnaissance are visual, multi-sensor imagery, and electronic.

1.4 ABBREVIATIONS

CORE SKILLS (2000 Phase)	
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)	
EXP	Expeditionary Operations Shore Based
AT	Assault Transport
AD	Aerial Delivery
TRAP	Tactical Recovery of Aircraft and Personnel
AE	Air Evacuation
CORE PLUS SKILLS (4000 Phase)	
HIE	Helicopter Insertion Extraction
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)	
RIE	Raid Insertion/Extraction
ADGR	Aviation-Delivered Ground Refueling
SEA	Expeditionary Operations Sea Based

1.5 DEFINITIONS

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

Core Skill	Fundamental, environmental, or conditional capabilities required to perform basic functions. These basic functions serve as tactical enablers that allow crews to progress to the more complex Mission Skills. Primarily 2000 Phase events but may be introduced in the 1000 Phase.
Mission Skill	Mission Skills enable a unit to execute a specific MET. They are comprised of advanced event(s) that are focused on MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness developed during Core Skill training. 3000 Phase events.
Core Plus Skill	Training events that can be theater specific or that have a low likelihood of occurrence. They may be Fundamental, environmental, or conditional capabilities required to perform basic functions. 4000 Phase events.
Core Plus Mission	Training events that can be theater specific or that have a low likelihood of occurrence. They are comprised of advanced event(s) that are focused on Core Plus MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness. 4000 Phase events.
Core Skill Proficiency (CSP)	CSP is a measure of training completion for 2000 Phase events. CSP is attained by executing all events listed in the Attain Table for each Core Skill. The individual must be simultaneously proficient in all events within that Core Skill to attain CSP.
Mission Skill Proficiency (MSP)	MSP is a measure of training completion for 3000 Phase events. MSP is attained by executing all events listed in the Attain Table for each Mission Skill. The individual must be simultaneously proficient in all events within that Mission Skill to attain MSP. MSP is directly related to Training Readiness.
Core Plus Skill Proficiency (CPSP)	CPSP is a measure of training completion for 4000 Phase "Skill" events. CPSP is attained by executing all events listed in the Attain Table for each Core Plus Skill. The individual must be simultaneously proficient in all events within that Core Plus Skill to attain CPSP
Core Plus Mission Proficiency (CPMP)	CPMP is a measure of training completion for 4000 Phase "Mission" events. CPMP is attained by executing all events listed in the Attain Table for each Core Plus Mission. The individual must be simultaneously proficient in all events within that Core Plus Mission to attain CPMP
Core Model Training Standard (CMTS)	CMTS is an objective optimum training standard used by squadrons that reflects the number of individuals trained to CSP/MSP, per crew position. The CMTS is for internal squadron planning only and is not utilized for readiness reporting. The numbers are determined by individual communities.
Core Model Minimum Requirement (CMMR RR)	CMMR represents the minimum crew definition qualifications and designations, the number of crews required per MET, and minimum Combat Leadership requirements for readiness reporting purposes.

1.6 MISSION ESSENTIAL TASK LIST (METL). The METL is comprised of specified capabilities-based Mission Essential Tasks (METs) which a unit is designed to execute. METs are drawn from the Marine Corps Task List (MCTL), are standardized by type unit, and defined as Core or Core Plus METs. Core METs are those tasks that a unit is expected to execute at all times, and are the only METs used in reporting the Training Level (T-Level) for the Core Mission (C-Level) in the Defense Readiness Reporting System - Marine Corps (DRRS-MC). Core Plus METs identify additional capabilities to support missions or plans which are limited in scope, theater specific, or have a lower probability of execution. Core Plus METs may be included in readiness reporting when contained within an Assigned Mission METL. An Assigned Mission METL consists of only selected METs (drawn from Core and Core Plus METs) necessary to conduct the assigned mission. MCO 3000.13 Readiness Reporting and Chapter 7 of the Aviation T&R Program Manual provide additional information on Aviation Training readiness reporting.

HMH CH-53E		
MISSION ESSENTIAL TASK LIST (METL)		
CORE		
MET	**ABBREVIATION**	**DESCRIPTION**
MCT 1.3.3.3.2	**EXP**	Conduct Aviation Operations from Expeditionary Shore-Based Sites
MCT 1.3.4.1	**AT**	Conduct Combat Assault Transport
MCT 4.3.4	**AD**	Conduct Air Delivery
MCT 6.2.1.1	**TRAP**	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)
MCT 6.2.2	**AE**	Conduct Air Evacuation
CORE PLUS		
MET	**ABBREVIATION**	**DESCRIPTION**
MCT 1.3.4.1.1	**RIE**	Conduct Airborne Rapid Insertion/Extraction
MCT 1.3.4.2.1	**ADGR**	Provide Aviation-Delivered Ground Refueling
MCT 1.3.3.3.1	**SEA**	Conduct Aviation Operations From Expeditionary Sea-Based Sites

1.7 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	**ABBREVIATION**	**SIX FUNCTIONS OF MARINE AVIATION**					
		OAS	**ASPT**	**AAW**	**EW**	**CoA&M**	**AerRec**
MCT 1.3.3.3.2	**EXP**		X				
MCT 1.3.4.1	**AT**		X				
MCT 4.3.4	**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				

1.8 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. For example: the MET for EXP shows a one-to-one relationship with the EXP Mission Skill. Shading indicates Core Plus.

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		
	FAM	INT	FORM	CAL	TERF	EXT	HAAR	FCLP	AG	GTR	TAC	NS HLL	NS LLL	EXP	AT	AD	TRAP	AE	HIE	TERF EXT	GTR	DM	CBRN	MTG	CQ	TG	TAC	RIE	ADGR	SEA
MCT 1.3.3.3.2 EXP	X	X	X	X	X				X	X	X	X	X	X							X	X	X	X		X	X			
MCT 1.3.4.1 AT	X	X	X	X	X				X	X	X	X	X		X					X	X	X	X	X		X	X			
MCT 4.3.4 AD	X	X	X	X	X	X			X	X	X	X	X			X			X		X	X	X	X		X	X			
MCT 6.2.1.1 TRAP	X	X	X	X	X	X	X		X	X	X	X	X				X				X	X	X	X		X	X			
MCT 6.2.2 AE	X	X	X	X	X				X	X	X	X	X					X			X	X	X	X		X	X			
CORE PLUS																														
MCT 1.3.4.1.1 RIE	X	X	X	X	X				X	X	X	X	X						X		X	X	X	X		X	X	X		
MCT 1.3.4.2.1 ADGR	X	X	X	X	X				X	X	X	X	X								X	X	X	X		X	X		X	
MCT 1.3.3.3.1 SEA	X	X	X	X	X			X	X	X	X	X	X								X	X	X	X	X	X	X			X

1.9 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% FMC aircraft and >90% T/O aircrew on hand. If unit FMC aircraft is <70% or T/O aircrew <90%, core capability will be degraded by a like percentage.

HMH MET Output Standards				
CH-53E Squadron/Squadron(-)/Detachment/Reserve Squadron (16/12/4/8) Aircraft				
CORE				
MCT	SKILL	MET	OUTPUT STANDARD	
			MAXIMUM DAILY SORTIES*	MAXIMUM MCT SORTIES
MCT 1.3.3.3.2	EXP	Conduct Aviation Operations From Expeditionary Shore-Based Sites	21/16/5/11	21/16/5/11
MCT 1.3.4.1	AT	Conduct Combat Assault Transport		21/16/5/11
MCT 4.3.4	AD	Conduct Air Delivery		21/16/5/11
MCT 6.2.1.1	TRAP	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)		21/16/5/11
MCT 6.2.2	AE	Conduct Air Evacuation		21/16/5/11
CORE PLUS				
MCT	SKILL	MET	OUTPUT STANDARD	
			MAXIMUM DAILY SORTIES*	MAXIMUM MCT SORTIES
MCT 1.3.4.1.1	RIE	Conduct Airborne Rapid Insertion/Extraction	21/16/5/11	21/16/5/11
MCT 1.3.4.2.1	ADGR	Provide Aviation-Delivered Ground Refueling		4/2/2/2 points
MCT 1.3.3.3.1	SEA	Conduct Aviation Operations From Expeditionary Sea-Based Sites		21/16/5/11

*A 16/12/4/8 plane Mission Capable HMH Squadron / Squadron(-)/Detachment/ Reserve Squadron is able to execute 32/24/8/14 total overall sorties on a daily (24 hour period) basis during contingency/combat operations.

1.10 CORE MODEL MINIMUM REQUIREMENTS (CMMR) TRAINING STANDARDS FOR READINESS REPORTING (DRRS-MC). The paragraphs and tables below delineate the minimum aircrew qualifications and designations required to execute the MET training standards and MET observed standards of para 1.9. MCO 3000.13 Readiness Reporting and Chapter 7 of the Aviation T&R Program Manual provide additional guidance and a detailed description of readiness reporting using the Defense Readiness Reporting System - Marine Corps (DRRS-MC).

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

HMH CH-53E CMMR for READINESS REPORTING									
CREW POSITION						FORMED CREWS REQUIRED PER MET (CREW CMMR)			
CORE									
MET	ABBREVIATION	PILOT	COPILOT*	CC	CC/AO*	**SQD**	**SQD(-)**	**DET**	**RES**
MCT 1.3.3.3.2	**EXP**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	16	12	4	4
MCT 1.3.4.1	**AT**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	8	3	4
MCT 4.3.4	**AD**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	8	3	4
MCT 6.2.1.1	**TRAP**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	8	3	4
MCT 6.2.2	**AE**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	12	8	3	4
CORE PLUS									
MET	ABBR	PILOT	COPILOT	CC	CC/AO*	**SQD**	**SQD(-)**	**DET**	**RES**
MCT 1.3.4.1.1	**RIE**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	6	2	2
MCT 1.3.4.2.1	**ADGR**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	6	2	2
MCT 1.3.3.3.1	**SEA**	MSP,HAC	NSQ(LLL),MSP*	MSP	NSQ(LLL),MSP*	8	4	4	2

COMBAT LEADERSHIP				
DESIGNATION	SQUADRON 16 A/C	SQUADRON(-) 12 A/C	DETACHMENT 4 A/C	RESERVE SQUADRON 8 A/C
HELICOPTER AIRCRAFT COMMANDER	16	12	4	6
SECTION LEADER	9	6	3	3
DIVISION LEADER	6	4	2	2
FLIGHT LEADER	4	3	1	2
MISSION COMMANDER	3	2	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.

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

HMH CH-53E CMTS			
CH-53E SQUADRON/SQUADRON (-)/DETACHMENT/RESERVE SQUADRON (16/12/4/8 Aircraft)			
CORE SKILLS (2000 Phase)			
CORE SKILL	**PILOTS**	**CREW CHIEFS**	**AO/G**
FAM	32/24/8/12	N/A	N/A
INT	N/A	16/12/4/6	16/12/4/6
FORM	32/24/8/12	16/12/4/6	16/12/4/6
CAL	32/24/8/12	16/12/4/6	16/12/4/6
TERF	32/24/8/12	16/12/4/6	16/12/4/6
EXT	32/24/8/12	16/12/4/6	16/12/4/6
HAAR	32/24/8/8	N/A	N/A
FCLP	32/24/8/12	16/12/4/6	16/12/4/6
AG	32/24/8/8	16/12/4/4	16/12/4/4
GTR	32/24/8/12	16/12/4/6	16/12/4/6
TAC	32/24/8/8	16/12/4/4	16/12/4/4
NS HLL	32/24/8/12	16/12/4/6	16/12/4/6
NS LLL	32/24/8/8	16/12/4/4	16/12/4/4
MISSION SKILLS (3000 Phase)			
MISSION SKILL	**PILOTS**	**CREW CHIEFS**	**AO/G**
EXP	32/24/8/12	16/12/4/6	16/12/4/6
AT	32/24/8/12	16/12/4/6	16/12/4/6
AD	32/24/8/12	16/12/4/6	16/12/4/6
TRAP	32/24/8/12	16/12/4/6	16/12/4/6
AE	32/24/8/12	16/12/4/6	16/12/4/6
CORE PLUS (4000 Phase)			
CORE+ SKILL	**PILOTS[1]**	**CREW CHIEFS[1]**	**AO/G[1]**
HIE	(16)32/(12)24/(4)8/(4)12	(8)16/(6)12/(2)4/(3)6	(8)16/(6)12/(2)4/(3)6
TERF EXT	(8)32/(6)24/(4)8/(6)12	(4)16/(3)12/(2)4/(3)6	(4)16/(3)12/(2)4/(3)6
GTR	(8)32/(6)24/(4)8/(6)12	(4)16/(3)12/(2)4/(3)6	(4)16/(3)12/(2)4/(3)6
DM	(8)32/(6)24/(4)8/(6)12	(4)16/(3)12/(2)4/(3)6	(4)16/(3)12/(2)4/(3)6
CBRN	(32)32/(24)24/(8)8/(12)19	(16)16/(12)12/(4)4/(6)13	(16)16/(12)12/(4)4/(6)13
MTG	N/A	(4)16/(3)12/(2)4/(3)6	(4)16/(3)12/(2)4/(3)6
CQ	(16)32/(8)24/(8)8/(8)19	(8)16/(4)12/(4)4/(4)9	(8)16/(4)12/(4)4/(4)9
TG	N/A	(4)16/(3)12/(2)4/(3)6	(4)16/(3)12/(2)4/(3)6
TAC	(16)32/(12)24/(8)8/(6)12	(8)16/(6)12/(4)4/(3)6	(8)16/(6)12/(4)4/(3)6
MISSION PLUS (4000 Phase)			
MISSION+ SKILL	**PILOTS[1]**	**CREW CHIEFS[1]**	**AO/G[1]**
RIE	(16)32/(12)24/(4)8/(4)12	(8)16/(6)12/(2)4/(3)6	(8)16/(6)12/(2)4/(3)6
ADGR	(16)32/(12)24/(4)8/(4)12	(8)16/(6)12/(2)4/(3)6	(8)16/(6)12/(2)4/(3)6
SEA	(16)32/(8)24/(8)8/(6)12	(8)16/(4)12/(4)4/(3)6	(8)16/(4)12/(4)4/(3)6

Note[1]: For Core Plus Skills, the first number 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 required within an Assigned Mission/Directed Mission Set.

1.12 INSTRUCTOR DESIGNATIONS (5000 Phase). Squadron requests for instructor designations in excess of those authorized per NAVMC 3500.50B shall be requested in writing to Marine Air Group Commanding Officers.

1.12.1 Tactical and Reserve Squadron

HMH CH-53E INSTRUCTOR DESIGNATIONS (5000 Phase)			
SQUADRON/SQUADRON (-)/DETACHMENT/RESERVE SQUADRON (16/12/4/8 Aircraft)			
DESIGNATIONS	**PILOTS**	**CREW CHIEFS**	**AO/AG**
TERFI	8/4/2/4	8/3/2/3	N/A
DMI	4/2/1/2	4/2/1/2	N/A
NSI	6/4/1/3	6/4/2/3	N/A
WTI	3/2/1/2	3/2/1/2	
ARI	6/3/1/3	N/A	
AGI	N/A	6/3/2/3**	
TGI	N/A	3/1/1/2**	
BIP	16/12/4/8	N/A	
NI	1/1/1/1	1/1/1/1	N/A
ANI	3/1/0/1	3/1/0/1	N/A
NII	4/2/1/2	N/A	
FLSE*	2/1/1/1	N/A	
*FLSEs are Designated by the Group CO **AO/AG designated as AGIs and TGIs may be used to fulfill this requirement			

1.12.2 HMHT-302 Fleet Replacement Squadron

HMHT-302 FRS INSTRUCTOR DESIGNATIONS (5000 PHASE)			
17 Aircraft			
DESIGNATIONS	**PILOTS**	**CREW CHIEFS**	**AO/AG**
FRSI	21	N/A	
TERFI	21	12	
DMI	0	0	
NSI	2	6	
NSFI***	8	4	
WTI	1	2	
ARI	0	N/A	
AGI	N/A	8**	
TGI	N/A	2**	
BIP	21	N/A	
NI	1	1	
ANI	2	1	
NII	3	N/A	
FLSE*	2	N/A	
*FLSEs are Designated by the Group CO **AO/AG designated as AGIs and TGIs may be used to fulfill this requirement *** NSIs may be used to fulfill NSFI requirement			

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

1.13.1 Tactical and Reserve Squadron

HMH CH-53E SQUADRON R,C,Q,D (6000 Phase)	
SQUADRON/SQUADRON (-)/DETACHMENT/RESERVE SQUADRON (16/12/4/8 Aircraft)	
DESIGNATIONS	**PILOTS**
FCP	8/5/3/4

1.13.2 HMHT-302 FRS R,C,Q,D

HMMT-302 R,C,Q,D (6000 Phase)	
(17 Aircraft)	
DESIGNATIONS	**PILOTS**
HAC	21
SECTION LEADER	21
DIVISION LEADER	4
FLIGHT LEADER	2
MISSION COMMANDER	0
FCP	12

1.14 CH-53E TRAINING RESOURCE REQUIREMENTS. 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.

1.14.1 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.

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

1.14.3 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.

1.14.4 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.

1.14.5 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 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. 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.

1.14.6 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.

1.14.7 HAAR Stage

a. KC-130 support for a minimum 4 hours a week.

b. Special use airspace capable of conducting HAAR.

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

1.14.9 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.

1.14.10 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.

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

1.14.12 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.

APPENDIX A

HMH (CH-53E) MET WORKSHEET

CORE

MCT 1.3.3.3.2	Conduct Aviation Operations From Expeditionary Shore-Based Sites
MCT 1.3.4.1	Conduct Combat Assault Transport
MCT 4.3.4	Conduct Air Delivery
MCT 6.2.1.1	Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)
MCT 6.2.2	Conduct Air Evacuation

CORE Plus

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

MCT 1.3.3.3.2 Conduct Aviation Operations From Expeditionary Shore-Based Sites

Conditions:

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 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 2.7.2 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/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 16/12/4/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 16/12/4/4 Crews NS LLL Core Skill Proficient
- 16/12/4/4 Crews Aerial Gunnery Core Skill Proficient
- 16/12/4/4 Crews GTR Core Skill Proficient

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

MCT 1.3.4.1 Conduct Combat Assault Transport

Conditions:

C 1.3.2.1 Light
Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C.1.3.2.3 Aviation Meteorological Conditions
Current weather/flight conditions affecting flight rules next 24 hours. Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

C 1.1.1.2 Terrain Elevation
Height of immediate terrain in reference to sea level.
Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

C 2.7.2 Air Superiority
The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

Standards (Squadron/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 12/8/3/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 12/8/3/4 Crews NS LLL Core Skill Proficient
- 12/8/3/4 Crews GTR Core Skill Proficient
- 12/8/3/4 Crews Aerial Gunnery Core Skill Proficient

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

MCT 4.3.4 **Conduct Air Delivery**

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/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 12/8/3/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 12/8/3/4 Crews NS LLL Core Skill Proficient
- 12/8/3/4 Crews GTR Core Skill Proficient
- 12/8/3/4 Crews Aerial Gunnery Core Skill Proficient
- 12/8/3/4 Crews External Core Skill Proficient

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

MCT 6.2.1.1 **Conduct Aviation Support of Tactical Recovery of Aircraft and Personnel (TRAP)**

Conditions:

C 1.3.2.1 Light
Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C.1.3.2.3 Aviation Meteorological Conditions
Current weather/flight conditions affecting flight rules next 24 hours. Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

C 1.1.1.2 Terrain Elevation
Height of immediate terrain in reference to sea level.
Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

C 2.7.2 Air Superiority
The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

Standards (Squadron/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 12/8/3/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 12/8/3/4 Crews NS LLL Core Skill Proficient
- 12/8/3/4 Crews GTR Core Skill Proficient
- 12/8/3/4 Crews Aerial Gunnery Core Skill Proficient
- 12/8/3/4 Crews External Core Skill Proficient
- 12/8/3/4 Crews HAAR Core Skill Proficient

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

MCT 6.2.2 **Conduct Air Evacuation**

Conditions:

C 1.3.2.1 Light
Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C.1.3.2.3 Aviation Meteorological Conditions
Current weather/flight conditions affecting flight rules next 24 hours. Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

C 1.1.1.2 Terrain Elevation
Height of immediate terrain in reference to sea level.
Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

C 2.7.2 Air Superiority
The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

Standards (Squadron/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 12/8/3/4 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 12/8/3/4 Crews NS LLL Core Skill Proficient
- 12/8/3/4 Crews GTR Core Skill Proficient
- 12/8/3/4 Crews Aerial Gunnery Core Skill Proficient

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

Core Plus

MCT 1.3.3.3.1 Conduct Aviation Operations From Expeditionary Sea-Based Sites

Conditions:

C 1.3.2.1 Light
Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C 1.3.1.3.1 Air Temperature
Atmospheric temperature at ground level (degrees Fahrenheit). Descriptors: Hot (> 85 F); Temperate (40 to 85 F); Cold (10 to 39 F); Very cold (< 10 F).

C 2.1.4.5 Intratheater Distance
Mileage between two locations (e.g., airfield to the FEBA). Descriptors: Very short (< 10 NM); Short (10 to 50 NM); Moderate (50 to 150 NM); Long (150 to 500 NM); Very long (> 500 NM).

Standards (Squadron/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 8/4/4/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 8/4/4/2 Crews NS LLL Core Skill Proficient
- 8/4/4/2 Crews GTR Core Skill Proficient
- 8/4/4/2 Crews Aerial Gunnery Core Skill Proficient
- 8/4/4/2 Crews Carrier Qualified

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

MCT 1.3.4.1.1 Conduct Airborne Rapid Insertion/Extraction

Conditions:

C 1.3.2.1 Light
Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C.1.3.2.3 Aviation Meteorological Conditions
Current weather/flight conditions affecting flight rules next 24 hours. Descriptors: VMC (Conditions that permit flight using external cues and a distinguishable horizon.)

C 1.1.1.2 Terrain Elevation
Height of immediate terrain in reference to sea level.
Descriptors: Very high (> 10,000 ft); High (6,000 to 10,000 ft); Moderately high (3,000 to 6,000 ft); Moderately low (1,000 to 3,000 ft); Low (500 to 1,000 ft); Very low (< 500 ft).

C 2.7.2 Air Superiority
The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

Standards (Squadron/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 8/6/2/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 8/6/2/2 Crews NS LLL Core Skill Proficient
- 8/6/2/2 Crews GTR Core Skill Proficient
- 8/6/2/2 Crews Aerial Gunnery Core Skill Proficient
- 8/6/2/2 Crews HIE Core Plus Skill Proficient

Output Standards:
- 21/16/5/11 Sorties daily sustained during contingency/combat operations

MCT 1.3.4.2.1 Provide Aviation-Delivered Ground Refueling

Conditions:

C 1.3.2.1 Light
Light available to illuminate objects from natural or manmade sources. Descriptors: Bright (sunny day); Day (overcast day); low (dusk, dawn, moonlit, streetlight lit); Negligible (overcast night)

C 2.7.2 Air Superiority
The extent to which operations in the air, over sea and/or, over land can be conducted with acceptable losses due to hostile air forces and air defense systems action. Descriptors: Full (Air Supremacy); General; Local.

Standards (Squadron/Sqdn (-)/Det/Reserve Sqdn):

Personnel:
- 8/6/2/2 aircrews formed
- 90% of squadron T/O personnel MOS qualified and deployable
  - And Level 2 (L2) IAW ALERTS.
- 100% critical MOS fill

Equipment:
- 70% Full Mission Capable (FMC) aircraft of PAA (11/8/5/2 aircraft)
  OR
  Upon establishment, 100 percent RFT entitlement IAW T/M/S standard.
- Operational support equipment fully supports MCT

Training:
- 8/6/2/2 Crews NS LLL Core Skill Proficient
- 8/6/2/2 Crews GTR Core Skill Proficient
- 8/6/2/2 Crews Aerial Gunnery Core Skill Proficient

Output Standards:
- Provide (4/2/2/2) refueling point capable of transferring 45gpm

CHAPTER 2

CH-53E PILOT (MOS 7566)

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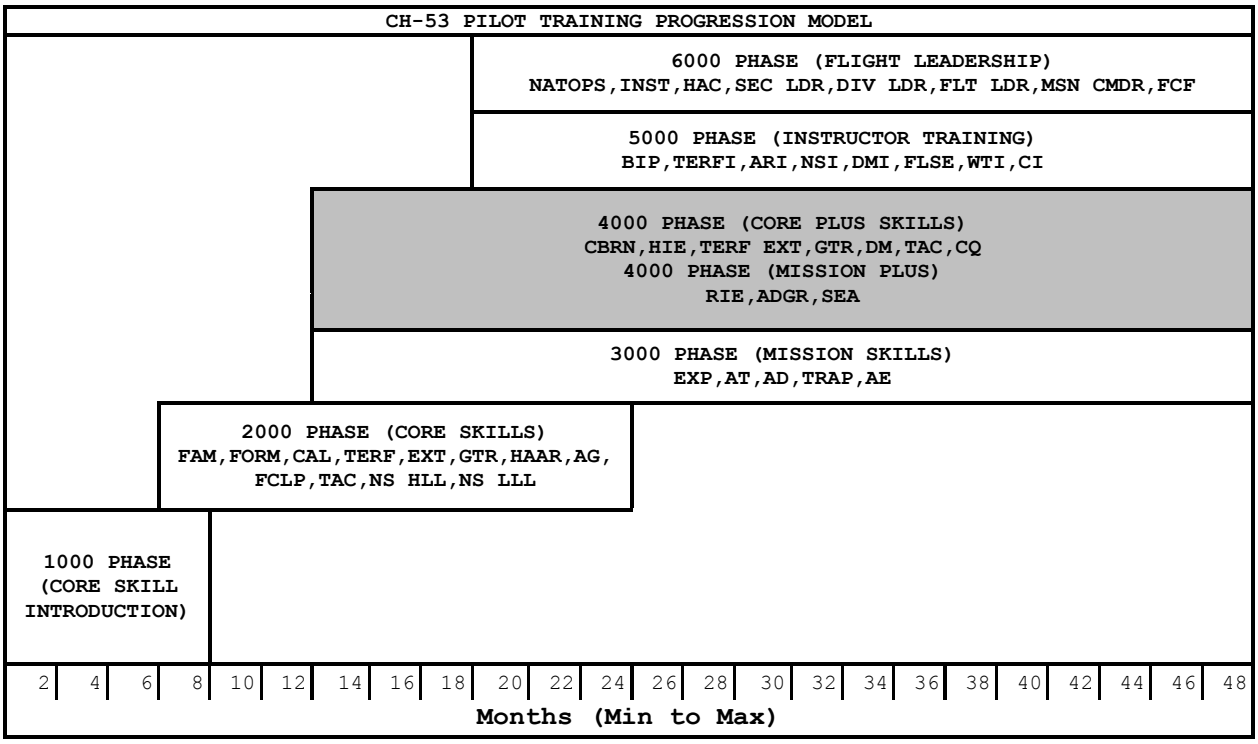
CHAPTER 2

CH-53 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.



2.2 PROFICIENCY & CURRENCY

2.2.1 Proficiency. Proficiency is a measure of achievement of a specific skill. Refly factors establish the maximum time between demonstration of those particular skills. To regain proficiency, an individual shall complete the delinquent events with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with an instructor from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, the instructor shall regain proficiency with another aircraft commander or as designated by the commanding officer.

2.2.2 Currency. A control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. For example, currency determines minimum altitudes in rules of conduct based upon the most recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in Chapter 3 of the Aviation T&R Program Manual.

2.3 INDIVIDUAL CORE SKILL PROFICIENCY REQUIREMENTS

2.3.1 Management of individual CSP serves as the foundation for developing proficiency requirements.

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

2.3.3 Proficiency is attained by individual Core Skill where the training events for each skill are determined by POI assignment.

2.3.4 Once proficiency has been attained by Core Skill (by any POI assignment) then the individual maintains proficiency by executing those events noted in the maintain table and in the Maintain POI column of the Attain and Maintain Table. An individual maintains proficiency by individual Core Skill.

Note

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

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

CH-53E PILOT ATTAIN AND MAINTAIN CORE SKILL PROFICIENCY (2000 Phase)						
SKILL	STAGE	T&R DESCRIPTION	ATTAIN PROFICIENCY			MAINTAIN POI
			BASIC POI	REFRESHER POI	SC POI	
FAM	ACAD	ARC-210	2001	2001		2001
	ACAD	AN/AYK-28	2002			
	ACAD	CH-53 INTERNAL CARGO	2003			
	ACAD	CH-53 AAR/ALE-47 (*)	2004	2004		2004
	ACAD	CH-53 PFPS TECHNIQUES	2006			
	SFAM	SIM FAM, INSTR, EP	2100	2100		2100
	FAM	DAY HUD FAM/CAL	2101	2101	2101	
	FAM	FAM, INSTR, EP	2105	2105		2105
FORM	ACAD	CH-53 TACFORM	2005			
	FORM	DAY FORM	2110	2110		2110
CAL	ACAD	DESERT OPERATIONS (*)	2007	2007		2007
	ACAD	MOUNTAIN OPERATIONS(CAL)	2008	2008		2008
	ACAD	CREW COORDINATION	2009			
	ACAD	HUD	2010			
	CAL	CALS	2210	2210		
	CAL	SECTION CALS	2211	2211	2211	2211
TERF	ACAD	ASD TERRAIN FLIGHT (TERF)	2011			
	ACAD	CH-53 APR-39 (*)	2012	2012		2012
	ACAD	SURFACE TO AIR THREAT	2013			
	TERF	TERF	2310			
	TERF	SECTION TERF	2311	2311	2311	2311

CH-53E PILOT ATTAIN AND MAINTAIN CORE SKILL PROFICIENCY (2000 Phase)						
SKILL	STAGE	T&R DESCRIPTION	ATTAIN PROFICIENCY			MAINTAIN POI
			BASIC POI	REFRESHER POI	SC POI	
EXT	ACAD	HEAVY LIFT OPERATIONS	2014	2014		2014
	ACAD	ASSLT SUPPORT ARTILLERY	2015			
	SEXT	HEAVY LIFT EXTERNALS SIM	2400	2400		
	EXT	SINGLE POINT EXTERNALS	2410	2410	2410	
	EXT	DUAL POINT EXTERNALS	2411	2411	2411	2411
	EXT	HLL SINGLE POINT EXTERNALS	2420	2420	2420	
	EXT	HLL DUAL POINT EXTERNALS	2421	2421	2421	2421
	EXT	LLL EXTERNAL	2430	2430	2430	2430
	EXT	HEAVY LIFT EXTERNALS	2441	2441		2441
GTR	ACAD	CH-53 DM/GTR I (GTR)	2016			
	ACAD	IR SAM THREAT	2017	2017		2017
	ACAD	AAQ-24(*)	2019	2019		2019
	ACAD	AAA THREAT	2020			
	ACAD	EVASIVE MANEUVERS	2021			
	SGTR	GTR & ASE FAM SIM	2500			
	GTR	NON RADAR GTR	2540	2540		2540
HAAR	ACAD	HAAR(*) (AR)	2022	2022	2022	2022
	SHAAR	DAY HAAR SIM	2600		2600	
	SHAAR	NS HAAR SIM	2601		2601	
	HAAR	DAY HAAR LEFT HOSE PREF	2610		2610	
	HAAR	DAY HAAR LEFT&RIGHT HOSE	2611	2611	2611	2611
	HAAR	NS HAAR	2640	2640	2640	2640
FCLP	SFCLP	SIM CQ	2700			
	FCLP	DAY FCLP	2710	2710	2710	2710
	FCLP	NS FCLP	2742	2742	2742	2742
AG	ACAD	CH-53 WEAPONS SYSTEMS (AG)	2023			
	ACAD	WEAPONS EMPLOYMENT	2024			
	ACAD	INTRO TO LASER SYSTEMS	2025			
	ACAD	MAGTF FSCMS	2026	2026		2026
	AG	AERIAL GUNNERY	2810			
	AG	NS GUNNERY	2840	2840		2840
TAC	ACAD	OBJECTIVE AREA PLANNING	2027	2027		2027
	ACAD	ROE	2028			
	ACAD	EXECUTION CHECKLIST	2029			
	ACAD	MISSION ANALYSIS(*)	2030	2030		2030
	TAC	LOW THREAT LEVEL TACTICS	2910			
	TAC	MED THREAT LEVEL TACTICS	2911	2911		2911
NS HLL	ACAD	NVG PREFLIGHT AND ADJUST	2031			
	ACAD	NVG SYS AND IMAGE CHAR	2032			
	ACAD	THE NIGHT ENV (HLL)	2033			
	ACAD	MISPERCEPTIONS & ILLUSIONS	2034			
	ACAD	NIGHT ROUTE PLANNING	2035			
	ACAD	NIGHT OPS AND PLANNING AIDS	2036			
	SHLL	OPERATIONS OF AIRCRAFT NS	2102	2102		
	HLL	HLL FORM	2120	2120		
	HLL	HLL CALS	2220			
	HLL	HLL SECTION CALS	2221	2221	2221	2221
	HLL	HLL TERF	2320			
	HLL	HLL SECTION TERF	2321	2321	2321	2321
	HLL	HLL CHECK/LOW THREAT TAC	2920	2920		2920

CH-53E PILOT ATTAIN AND MAINTAIN CORE SKILL PROFICIENCY (2000 Phase)						
SKILL	STAGE	T&R DESCRIPTION	ATTAIN PROFICIENCY			MAINTAIN POI
			BASIC POI	REFRESHER POI	SC POI	
NS LLL	ACAD	HUMAN FACTORS	2037			
	ACAD	FLIR TRAINING COURSE	2038			
	ACAD	CH-53 HNVS FLIR (LLL)	2039			
	ACAD	AS ESCORT TACTICS	2040			
	ACAD	BATTLEFIELD ILLUMINATION	2041			
	LLL	LLL CALS	2230			
	LLL	LLL SECTION CALS	2231	2231	2231	2231
	LLL	LLL TERF	2330			
	LLL	LLL SECTION TERF	2331	2331	2331	2331
	LLL	LLL CHECK/MED THREAT TAC	2930	2930	2930	2930

NOTE

Specific Maintain events are selected by community SMEs to update corresponding skills in the Attain table. Maintaining proficiency in these select events will ensure the individual will never go delinquent in that corresponding skill in the Attain table.

2.4 INDIVIDUAL MISSION SKILL PROFICIENCY REQUIREMENTS

2.4.1 Management of individual MSP serves as the foundation for developing proficiency requirements in DRRS-MC.

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

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

2.4.4 Once proficiency has been attained by Mission Skill (by any POI assignment) then the individual maintains proficiency by executing those events noted in the Maintain table and in the Maintain POI column of the Attain and Maintain Table. An individual maintains proficiency by individual Mission Skill.

Note

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

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

CH-53E PILOT ATTAIN AND MAINTAIN MISSION SKILL PROFICIENCY (3000 Phase)						
SKILL	STAGE	T&R DESCRIPTION	ATTAIN PROFICIENCY			MAINTAIN POI
			BASIC POI	REFRESHER POI	SC POI	
EXP	ACAD	RAPID RESPONSE PLANNING	3000			
	ACAD	REC THREAT TO THE MAGTF	3001			
	LLL	LLL SECTION CALS	2231	2231	2231	2231
	LLL	LLL SECTION TERF	2331	2331	2331	2331
	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	EXP	EXPEDITIONARY SHORE BASED TAC	3140	3140		3140
AT	ACAD	NEO EXECUTION	3002			
	ACAD	INTELL PREP OF BATTLESPACE	3003			
	LLL	LLL SECTION CALS	2231	2231	2231	2231
	LLL	LLL SECTION TERF	2331	2331	2331	2331
	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	AT	ASSAULT TRANSPORT TACTICS	3240	3240		3240
AD	LLL	LLL SECTION CALS	2231	2231	2231	2231
	LLL	LLL SECTION TERF	2331	2331	2331	2331
	EXT	LLL EXTERNAL	2430	2430	2430	2430
	EXT	HEAVY LIFT EXTERNALS	2441	2441		2441
	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	AD	AERIAL DELIVERY TACTICS	3340	3340		3340
TRAP	ACAD	PERSONNEL RECOVERY	3004			
	ACAD	CH-53 SPECIFIC TRAP TTPs	3005			
	LLL	LLL SECTION CALS	2231	2231	2231	2231
	LLL	LLL SECTION TERF	2331	2331	2331	2331
	EXT	LLL EXTERNAL	2430	2430	2430	2430
	EXT	HEAVY LIFT EXTERNALS	2441	2441		2441
	GTR	NON RADAR GTR	2540	2540		2540
	HAAR	NS HAAR	2640	2640	2640	2640
	AG	NS GUNNERY	2840	2840		2840
	TRAP	TRAP TACTICS	3440	3440		3440
AE	ACAD	CASEVAC	3006			
	ACAD	CIRCADIAN RHYTHM & FATIGUE	3007			
	ACAD	INTRO NVG TAC EMPLOYMENT	3008			
	LLL	LLL SECTION CALS	2231	2231	2231	2231
	LLL	LLL SECTION TERF	2331	2331	2331	2331
	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	AE	AERIAL EVACUATION TACTICS	3540	3540		3540

NOTE

Specific Maintain events are selected by community SMEs to update corresponding skills in the Attain table. Maintaining proficiency in these select events will ensure the individual will never go delinquent in that corresponding skill in the Attain table.

2.5 INDIVIDUAL CORE PLUS SKILL PROFICIENCY REQUIREMENTS

2.5.1 Management of individual CPSP serves as the foundation for developing proficiency requirements.

2.5.2 Individual CPSP is a “Yes/No” status assigned to an individual by Core Plus Skill. When an individual attains and maintains CPSP in a Core Plus Skill, the individual counts towards CMMR Unit CPSP requirements for that Core Plus Skill.

2.5.3 Proficiency is attained by individual Core Plus Skill where the training events for each skill are determined by POI assignment.

2.5.4 Once proficiency has been attained by Core Plus Skill (by any POI assignment) then the individual maintains proficiency by executing those events noted in the Maintain table and in the Maintain POI column of the Attain and Maintain Table. An individual maintains proficiency by individual Core Plus Skill.

Note

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

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

CH-53E PILOT ATTAIN AND MAINTAIN CORE PLUS PROFICIENCY (4000 Phase)						
SKILL	STAGE	DESCRIPTION	ATTAIN PROFICIENCY			MAINTAIN POI
			BASIC POI	REFRESHER POI	SC POI	
HIE	HIE	HELOCAST	4110	4110		4110
	HIE	FASTROPE/SPIE/RAPEL	4140		4140	
	HIE	PARA OPS	4141			
TERF EXT	SEXT	DAY TERF EXTERNALS	4412	4412	4412	
	SEXT	NS TERF EXTERNALS	4440	4440	4440	4440
GTR	ACAD	RF SAM	4000			
	GTR	RADAR GTR	4540	4540		4540
DM	ACAD	DM GAME PLANNING	4001			
	ACAD	CH-53 DM/GTR II	4002			
	ACAD	HELICOPTER PS AND EM	4003			
	ACAD	FW THREAT TO AS	4004			
	ACAD	ATTACK HELO THREAT TO AS	4005			
	DM	RW DM	4510	4510		4510
	DM	FW DM	4511	4511		4511
CBRN	SCBRN	CBRN FAM	4600			
CQ	CQ	DAY CQ	4711	4711	4711	
	CQ	NS CQ	4743	4743	4743	4743
TAC	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	ACAD	RGR	4006			
	ACAD	MOUT	4007			
	TAC	DIV TACTICS	4940	4940		4940
	TAC	URBAN TACTICS	4941	4941		4941
	TAC	LONG RANGE TACTICS	4942	4942		4942
RIE	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	ACAD	JCAS	4008			
	ACAD	GCE RAID PLANNING	4009			
	ACAD	TARGETING AND FIRE SUPPORT	4010			
	RAID	RIE TACTICS	4980	4980		4980
ADGR	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	ACAD	TBFDS/MK-105	4011			
	ADGR	ADGR TACTICS	4981	4981		4981
SEA	GTR	NON RADAR GTR	2540	2540		2540
	AG	NS GUNNERY	2840	2840		2840
	SEA	SEA BASED TACTICS	4982	4982		4982

NOTE

Specific Maintain events are selected by community SMEs to update corresponding skills in the Attain table. Maintaining proficiency in these select events will ensure the individual will never go delinquent in that corresponding skill in the Attain table.

2.6 REQUIREMENTS, QUALIFICATIONS, AND DESIGNATION TABLES. The tables below delineate T&R events required to be completed to attain proficiency, and initial qualifications and designations. In addition to event requirements, all stage lectures, briefs, squadron training, prerequisites and other criteria shall be completed prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in Aircrew Performance Records (APR) and NATOPS jackets. Loss of proficiency in all qualification events causes the associated qualification to be lost. Regaining a qualification requires completing all R-coded syllabus events associated with that qualification.

INDIVIDUAL QUALIFICATION REQUIREMENTS for 7566	
Qualification	**Event Requirements**
NATOPS	6000,6001,6002,6003,6100,6101 and IAW OPNAV 3710.7.
Instrument	6005,6006,6102 and IAW OPNAV 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
DM	2016,2021,4001-4005,4510R,4511R

INDIVIDUAL DESIGNATION REQUIREMENT FOR 7566	
Designation	**Event Requirements**
H2P	Core Skill Introduction complete,1902
HAC	Core Skill and Mission Skill complete,S5100,S5101,5110,6120,6121,6122R
BIP	Core Skill and Mission Skill 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	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
WTI	Per MAWTS-1 WTI Course Catalog
FRSI-E	5500, 5502,5503,5504,5505,5506
NI/ANI	6100 given by Model Manager / 6100 given by a NATOPS Instructor
NII	Designated by Squadron CO
FCP	6610-6617, IAW OPNAVINST 4790 and command specific directives

2.7 PROGRAMS OF INSTRUCTION (POI).

2.7.1 Basic/Transition (B/T) POI. Basic, Transition, and Model Conversion pilots shall be assigned to the Basic POI. Full or Modified Refresher pilots will fly those flights designated by an MR or R in the flight description IAW the Program Manual NAVMC 3500.14. Those pilots previously designated 7566, returning to a 7566 billet (and have not been out of T/M for greater than 485 days) shall complete a squadron refresher syllabus IAW with paragraph 2.7.4. 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 designated by R or MR in the event description. These ATFs will replace ATFs previously entered in section 3.

WEEKS	COURSE	PERFORMING ACTIVITY
1-24	CH-53E Core Skill Intro	USMC CH-53E FRS
25-68	Core Skill Training	Tactical Squadron
68+	Mission Skill Training	Tactical Squadron
68+	Core Plus Skill Training	Tactical Squadron

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

WEEKS	COURSE	PERFORMING ACTIVITY
1-4	CH-53E Core Skill Intro	USMC CH-53E FRS
5-26	Core Skill Training	Tactical Squadron
27+	Mission Skill Training	Tactical Squadron
27+	Core Plus Skill Training	Tactical Squadron

2.7.3 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, 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.

2.7.4 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.

2.7.5 POI Fleet Replacement Squadron Instructor Echo Pilot

WEEKS	COURSE	PERFORMING ACTIVITY
1-4	CH-53E INSTRUCTOR PILOT FLT TRNG	USMC CH-53E FRS

2.8 ACADEMIC TRAINING

2.8.1 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.

2.8.2 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.

2.8.3 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.

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

2.8.5 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).

2.8.6 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 (0000-0999)
CBT-0001	INTRO TO THE CH-53
CBT-0002	THE AUXILLARY POWER PLANT
CBT-0003	THE ELECTRICAL SYSTEM
CBT-0004	HYDRAULIC SYSTEM
CBT-0005	FUEL SYSTEM
CBT-0006	ENGINES
CBT-0007	DRIVE TRAIN
CBT-0008	CHIP DETECTING SYSTEM
CBT-0009	ROTOR SYSTEM
CBT-0010	FLIGHT CONTROL SYSTEM
CBT-0011	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)
CBT-0012	BLADE/PYLON FOLD AND ROTOR BRAKE SYSTEM
CBT-0013	LANDING GEAR AND WHEEL BRAKE SYSTEM
CBT-0014	MISCELLANEOUS SYSTEM
CBT-0015	COMMUNICATION AND NAVIGATION SYSTEMS
CBT-0016	AIRCRAFT SURVIVABILITY EQUIPTMENT
CBT-0017	PREFLIGHT PLANNING AND PROCEDURES
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-0100	GROUND SCHOOL INTRO IN-BRIEF
ACAD-0101	ELECTRICAL SYSTEM
ACAD-0102	HYDRAULIC SYSTEM
ACAD-0103	FUEL SYSTEM
ACAD-0104	ENGINES AND THE AUXILLARY POWER PLANT
ACAD-0105	DRIVE TRAIN AND ROTOR SYSTEM
ACAD-0106	FLIGHT CONTROL SYSTEM
ACAD-0107	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)
ACAD-0108	COMMUNICATION AND NAVIGATION SYSTEMS
ACAD-0109	CREW RESOURCE MANAGEMENT (CRM) INITIAL
LAB-0110	INTRODUCE PREFLIGHT INSPECTION PROCEDURES
LAB-0111	PRACTICE PREFLIGHT INSPECTION PROCEDURES
LAB-0112	REVIEW 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/HAVEQUICK/SINCGARS(*)
ACAD-2002	(U) AN/AYK-28
ACAD-2003	(U) CH-53 INTERNAL CARGO OPERATIONS
ACAD-2004	(S) CH-53 AAR/ALE-47 (*)
ACAD-2005	(U) CH-53 TACFORM
ACAD-2006	(U) CH-53 PFPS TECHNIQUES
CAL STAGE	
ACAD-2007	(U) DESERT OPERATIONS(*)
ACAD-2008	(U) MOUNTAIN OPERATIONS(*)
ACAD-2009	(U) COMBAT AIRCREW COORDINATION
ACAD-2010	(U) HUD
TERF STAGE	
ACAD-2011	(U) ASD TERRAIN FLIGHT
ACAD-2012	(S) CH-53 APR-39 (*)
ACAD-2013	(S) SURFACE TO AIR THREAT TO THE MAGTF
EXT STAGE	
ACAD-2014	(U) 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
HAAR STAGE	
ACAD-2022	(U) HAAR(*)
AG STAGE	
ACAD-2023	(U) CH-53 WEAPONS SYSTEMS AND TRAINING
ACAD-2024	(U) WEAPONS EMPLOYMENT TECHNIQUES
ACAD-2025	(U) INTRO TO LASER SYSTEMS AND SAFETY
ACAD-2026	(U) FSCMS(*)
TAC STAGE	
ACAD-2027	(U) OBJECTIVE AREA PLANNING(*)
ACAD-2028	(S) ROE
ACAD-2029	(U) EXECUTION CHECKLIST
ACAD-2030	(U) PROBLEM FRAMING(*)
HLL STAGE	
ACAD-2031	(U) ASSAULT NVG PREFLIGHT AND ADJUSTMENT PROCEDURES
ACAD-2032	(U) NVG SYSTEMS AND IMAGE CHARACTERISTICS
ACAD-2033	(U) THE NIGHT ENVIRONMENT
ACAD-2034	(U) MISPERCEPTIONS AND ILLUSIONS
ACAD-2035	(U) NIGHT ROUTE PLANNING CONSIDERATIONS
ACAD-2036	(U) NIGHT OPERATIONS AND PLANNING AIDS

LLL STAGE	
ACAD-2037	(U) HUMAN FACTORS
ACAD-2038	(U) FLIR TRAINING COURSE
ACAD-2039	(U) CH-53 HNVS FLIR
ACAD-2040	(S) ASSAULT SUPPORT ESCORT TACTICS
ACAD-2041	(U) BATTLEFIELD ILLUMINATION AND ITG PLANNNING CONSIDERATIONS

* Denotes annual academic training requirements.

T&R CODE	ACADEMIC SYLLABUS
	MISSION SKILL PHASE (3000)
EXP STAGE	
ACAD-3000	(U) RAPID RESPONSE PLANNING
ACAD-3001	(S) REC THREAT TO THE MAGTF
AT STAGE	
ACAD-3002	(U) NEO EXECUTION
ACAD-3003	(U) INTELLIGENCE PREPARATION OF THE BATTLE SPACE

TRAP STAGE	
ACAD-3004	(S) PERSONNEL RECOVERY
ACAD-3005	(S) CH-53 SPECIFIC 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
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 ASSAULT SUPPORT
TAC STAGE	
ACAD-4006	(U) RGR
ACAD-4007	(S) MOUT
RAID STAGE	
ACAD-4008	(U) JCAS
ACAD-4009	(S) GCE RAID PLANNING
ACAD-4010	(U) MAGTF TARGETING AND FIRE SUPPORT PLANNING
ADGR STAGE	
ACAD-4011	(U) TBFDS/MK-105

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

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

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: WEAPONEERING 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.

2.9 EVENT REQUIREMENTS

2.9.1 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.

2.9.1.1 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.

2.9.1.2 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).

2.9.1.3 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 TECOM website:

https://vcepub.tecom.usmc.mil/sites/msc/magtftc/mawts1/departments1/ASD/CH-53%20Division.aspx

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

2.9.1.5 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.

2.9.1.6 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.

2.9.1.7 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.

2.9.1.8 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.

2.9.2 Event Header

2.9.2.1 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.

2.9.2.2 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).

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

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

Code	Environmental Condition
D	Shall be flown or conducted during day
N	Shall be flown or conducted at night (using available night vision devices or flown unaided) at least 30 minutes after official sunset.
(N)	May be flown or conducted day or night; if at night, available night vision devices may be used or flown 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
NS	Shall be flown or conducted at night using available night vision devices at least 30 minutes after official sunset
(NS)	May be flown or conducted day or night; if at night, available night vision devices shall be used
N*	Event Shall be flown or conducted at night unaided
(N*)	Event may be flown or conducted at night; if at night, shall be flown unaided

2.9.2.5 "E"-Coded Events. Delineates a special event that requires an evaluation. The "E"-coded event also requires an ATF upon execution of every occurrence.

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

Symbol	Device
A	Event performed in aircraft
S	Event performed in simulator or a simulated practical application
A/S	Event performed in aircraft preferred/simulator optional
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

2.9.2.6.1 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.

2.9.3 Event Body

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

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

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

2.9.3.1.3 Introduce. The IP may perform the maneuver with an accompanying description, or the IP may coach the PUI through the maneuver without demonstration. The PUI shall perform the maneuver with coaching, as necessary, and is responsible for knowledge of the procedures prior to the sortie.

2.9.3.1.4 Review. The IP observes and grades the maneuver without coaching the PUI. An airborne critique of PUI performance is at the option of the

instructor. The PUI is expected to perform the maneuver without coaching and devoid of procedural error at a level acceptable to warrant progress into the next stage of training.

2.9.3.2 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.

2.9.3.2.1 Grading Standards

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

2.9.3.2.1.2 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.

2.9.3.2.1.3 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 R.A.T. 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.

2.9.3.2.1.4 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.

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

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

2.9.3.5 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 OPNAVINST, 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.

2.10 CORE SKILL INTRODUCTION PHASE (1000)

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

2.10.2 General

2.10.3 Stages. Core Skill Introduction stages are as follows:

	CORE SKILL INTRODUCTION PHASE
PAR NO.	**STAGE NAME**
2.10.4	Academics (ACAD)
2.10.5	Familiarization (FAM)
2.10.6	Night Familiarization (NFAM)
2.10.7	Instrument (INST)
2.10.8	Navigation (NAV)
2.10.9	Formation (FORM)
2.10.10	Confined Area Landings (CAL)
2.10.11	Externals (EXT)
2.10.12	Terrain Flight (TERF)
2.10.13	Review (REV)
2.10.14	Core Skill Introduction Check (CSIX)

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

2.10.4.1 Ground school is set up in two parts: CBTs and ACAD classes.

2.10.4.2 The Commanding Officer of the HMHT-302 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.

2.10.4.3 The CO of HMHT-302 has waiver authority over any event within Ground School for the respective syllabus.

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

CBT-0001 1.0 * R,MR,CIUT CBT 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 * R,MR,CIUT CBT 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. CBT-0001

CBT-0003 2.0 * R,MR,CIUT CBT 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. CBT-0001

CBT-0004 2.0 * R,MR,CIUT CBT Hydraulic System

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

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

Prerequisite. CBT-0001

CBT-0005 1.5 * R,MR,CIUT CBT Fuel System

Goal. The PUI has completed all Fuel System modules with a basic understanding of the CH-53E 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. CBT-0001

CBT-0006 2.5 * R,MR,CIUT CBT 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 Overtorque Warning System
Engine Overspeed Protection System
Engine Fire Protection

Prerequisite. CBT-0001

CBT-0007 2.5 * R,MR,CIUT CBT 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. CBT-0001

CBT-0008 1.0 * R,MR,CIUT CBT 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. CBT-0006 and CBT-0007

CBT-0009 1.0 * R,MR,CIUT CBT 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. CBT-0001

CBT-0010 3.0 * R,MR,CIUT CBT 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. CBT-0004 and CBT-0009

CBT-0011 2.0 * R,MR,CIUT CBT Automatic Flight Control System (AFCS)

Goal. The PUI has completed the modules with a basic understanding of the CH-53E AFCS system.

Requirement
Modules:
DAFCS Overview and Channel Philosophy
AFCS Servo Interface and Modes of Operations*
Engagement Control
Malfunction Indications*

Prerequisite. CBT-0004 and CBT-0010

CBT-0012 2.5 * R,MR,CIUT CBT 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. CBT-0004

CBT-0013 1.5 * R,MR,CIUT CBT 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 systems.

Requirement
Modules:
Landing Gear
Wheel Brake System
Tail Skid System
Landing Gear and Altitude Warning System

Prerequisite. CBT-0004

CBT-0014 3.0 * R,MR,CIUT CBT 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. CBT-0001

CBT-0015 2.0 * R,MR,CIUT CBT 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. CBT-0001

CBT-0016 2.5 * R,MR,CIUT CBT 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

Prerequisite. CBT-0001

CBT-0017 2.0 * CIUT CBT 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. CBT 0001-0016

CBT-0018 3.0 * CIUT CBT 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, Postflight, EPs & CRM
Single Point Performance Check
Integrated Maintenance Diagnostic System (IMDS)

Prerequisite. CBT-0017

CBT-0019 1.5 * CIUT CBT Night Flight

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

Requirement
Modules:
Night Flying
Aircraft Lighting

Prerequisite. CBT-0017

CBT-0020 2.5 * CIUT CBT 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. CBT-0017

CBT-0021 2.5 * CIUT CBT 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
HNVS Introduction
GPS Introduction
HNVS Operating Procedures
GPS Operating Procedures

Prerequisite. CBT-0017

CBT-0022 1.0 * CIUT CBT 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. CBT-0017

CBT-0023 1.0 * CIUT CBT 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. CBT-0017

CBT-0024 2.0 * CIUT CBT 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. CBT-0017

ACAD-0100 1.0 * CIUT CLSRM Ground School Intro In-Brief

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

Requirement

Discuss:

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

Demonstrate:

- Computer based training access
- Basic operation of CBTs

Prerequisite. CBT 0001-0016

ACAD-0101 3.0 * CIUT CLSRM 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. CBT 0001-0016

ACAD-0102 3.0 * CIUT CLSRM 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. CBT 0001-0016

ACAD-0103 2.0 * CIUT CLSRM 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. CBT 0001-0016

ACAD-0104 3.0 * CIUT CLSRM Engines and the Auxiliary Power Plant

Goal. The PUI has an in-depth knowledge of the CH-53E APP, engine, and associated components and systems.

Requirement

Reading: Applicable excerpts from CH-53E NATOPS and Systems Guide

Discuss:

Basic architecture and major components
Associated cautions and advisories
Indications and recognition of component failures
Impact of component failures
Correct response to component failures

Prerequisite. CBT 0001-0016

ACAD-0105 3.0 * CIUT CLSRM Drive Train and Rotor System

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. CBT 0001-0016

ACAD-0106 3.0 * CIUT CLSRM 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. CBT 0001-0016

ACAD-0107 2.0 * CIUT CLSRM 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. CBT 0001-0016

ACAD-0108 1.5 * CIUT CLSRM 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. CBT 0001-0016

ACAD-0109 2.5 * CIUT CLSRM 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
Crew Resource Management in the CH-53

LAB-1000 2.0 * R,MR A 1 CH-53(STATIC)

Goal. Introduce preflight inspection procedures.

Requirement
Instructor: FAM-1115 complete RAC

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 Standardization Manual.

External Syllabus Support. 1 Static CH-53

Prerequisite. ACAD 0100-0108

LAB-1001 2.0 * R,MR A 1 CH-53(STATIC)

Goal. Practice preflight inspection procedures.

Requirement
Instructor: Crew Chief, (Crew Chief Instructor preferred)

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 Standardization Manual.

External Syllabus Support. 1 Static CH-53

Prerequisite. LAB-1000

LAB-1002 2.0 * R,MR A 1 CH-53(STATIC)

Goal. Review preflight inspection procedures. At the completion of FAM-1002, PUI shall be proficient in preflight procedures. At completion of FAM-1002, PUI shall turn in FAM-1002 ATF to the Safety and Operations Departments.

Requirement
Instructor: FRS IP

Demonstrate:
Maintenance Control procedures
Flight Equipment procedures
NATOPS preflight briefing

Discuss:
Preflight planning requirements (Weight and Power, Flight Schedule, ODO brief, Read and Initial Board)
Local SOPs
T&R Manual

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 Standardization Manual.

Prerequisites. LAB-1001

External Syllabus Support. 1 Static CH-53

2.10.5 Familiarization (FAM) (1100)

2.10.5.1 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.

2.10.5.2 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 Standardization Manual(s).

SFAM-1100 1.0 * R,MR S 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 Standardization Manual.

Prerequisites. CBT-0017

External Syllabus Support. WST/APT.

SFAM-1101 1.0 * S 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 Standardization Manual.

Prerequisites. CBT-0018, FAM-1100

External Syllabus Support. WST/APT

SFAM-1102 1.0 * S WST/APT

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 Standardization Manual.

Prerequisites. FAM-1101

External Syllabus Support. WST/APT

SFAM-1103 1.0 * S WST/APT

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)
Nf flex shaft failure

Practice:
Aircraft emergencies
Previously introduced flight procedures
Normal cockpit procedures

Performance Standards. Per CH-53 NATOPS and Standardization Manual.

Prerequisites. FAM-1102

External Syllabus Support. WST/APT

SFAM-1104 1.0 * 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 Standardization Manual.

Prerequisites. FAM-1103

External Syllabus Support. WST/APT

SFAM-1105 1.5 * R,MR 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 Standardization Manual.

Prerequisites. FAM-1104

External Syllabus Support. WST/APT

SFAM-1106 1.0 * R,MR S WST/APT

Goal. Conduct Progress Check. Introduce communication skills IAW CRM techniques.

Requirement

Introduce:

Ground resonance procedure
Power settling (vortex ring state)
Settling with power
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 Standardization Manual.

Prerequisites. FAM-1105

External Syllabus Support. WST/APT

SFAM-1107 1.0 * NS S WST/APT

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 Standardization Manual.

Prerequisites. The Night Imaging and Threat Evaluation (NITE) Lab syllabus, CBT-0102, CBT-0019, FAM-1106

External Syllabus Support. WST/APT

FAM-1110 1.5 * D A 1 CH-53E

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 FRS Standardization Manual.

Prerequisites. LAB-1002, FAM-1106

FAM-1111	1.5	*	D	A	1 CH-53E

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 FRS Standardization Manual.

Prerequisites. FAM-1110

FAM-1112 1.5 * MR D A 1 CH-53E

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 Standardization Manual.

Prerequisites. FAM-1111

FAM-1113 1.5 * D A 1 CH-53E

Goal. Introduce no hover landings. Practice previously introduced FAM maneuvers and simulated emergency procedures.

Requirement

Discuss:

- The effects of aircraft gross weight on single and/or dual engine performance capability
- Single/dual engine wave-off
- 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 approaches and landings (running and to a spot)
Simulated single and/or dual engine failure above 50 feet AGL

Practice:
Previously introduced FAM maneuvers
Simulated emergency procedures

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. FAM-1112

FAM-1114	1.5	*	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 autorotations (Refreshers, Modified Refreshers, and Series Conversions only)

Practice:
Previously introduced FAM maneuvers
Simulated emergency procedures

Performance Standards. Per CH-53 NATOPS and Standardization Manual.

Prerequisites. FAM-1113

FAM-1115	1.5	*		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
Autorotations with power recovery

Practice:
All FAM maneuvers
Simulated emergency procedures

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. FAM-1114

FAM-1116 1.5 * R,MR D A 1 CH-53E

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 Standardization Manual.

Prerequisites. FAM-1115

FAM-1117 1.5 * D A 1 CH-53E

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 FRS Standardization Manual.

Prerequisites. FAM-1116

FAM-1118 1.5 * R,MR D A 1 CH-53E

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 power settling and settling with power
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 Standardization Manual.

Prerequisites. FAM-1117

FAM-1119 1.5 * D A 1 CH-53E

Goal. Conduct Progress Check.

Requirement

Practice:

All FAM maneuvers
Simulated emergency procedures

Performance Standards. Demonstrate proficiency of FAM maneuvers IAW CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. FAM-1118, CH-53E NATOPS open book exam.

2.10.6 Night Familiarization (NFAM)

2.10.6.1 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.

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

FAM-1201 1.5 * NS A 1 CH-53E

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

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, FRS Standardization Manual, 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	*	R,MR	NS	A	1 CH-53E

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, Standardization Manual, and MAWTS-1 NVD manual.

Prerequisites. FAM-1201

2.10.7 Instruments (INST)

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

2.10.7.2 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 OPNAV night minimums requirement.

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

SINST-1300 1.0 * S WST/APT

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 Standardization Manual.

Prerequisites. CBT-0020

External Syllabus Support. WST/APT

SINST-1301 1.0 * R S WST/APT

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 Standardization Manual.

Prerequisites. INST-1300

External Syllabus Support. WST/APT

SINST-1302 1.0 * R S WST/APT

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 Standardization Manual.

Prerequisites. INST-1301

External Syllabus Support. WST/APT

SINST-1303 1.0 * R S WST/APT

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 Standardization Manual.

Prerequisites. INST-1302

External Syllabus Support. WST/APT

SINST-1304 1.0 * S WST/APT

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 FRS Standardization Manual.

Prerequisites. INST-1303

External Syllabus Support. WST/APT

INST-1305 2.0 * R,MR (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 Standardization Manual.

Prerequisites. INST-1304

INST-1306 1.5 * R (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 Standardization Manual.

Prerequisites. INST-1305.

2.10.8 Navigation (NAV)

2.10.8.1 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

2.10.8.2 Crew Requirement. N/A

NAV-1400 1.0 * S APT/WST

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-53E NATOPS and FRS Standardization Manual.

Prerequisites. CBT-0021

External Syllabus Support. WST/APT

2.10.9 Formation (FORM)

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

2.10.9.2 Crew Requirement. 1501: IP/RAC/CC. 1502: IP/RAC/CC/AO.

SFORM-1500 1.0 * R,MR S WST/APT

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 Standardization Manual.

Prerequisites. CBT-0022

External Syllabus Support. WST/APT

FORM-1501 2.0 * R,MR 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 Standardization Manual.

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 * 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 FRS Standardization Manual.

Prerequisite. FAM-1202, FORM-1501, CAL-1602 and CAL-1603.

Range Requirements. Approved CAL/MAL site.

2.10.10 Confined Area Landings (CAL) (1600)

2.10.10.1 Purpose. Develop takeoff and landing skills in confined areas.

2.10.10.2 Crew Requirement. 1601/1602: IP/RAC/CC. 1603/1604: IP/RAC/CC/AO.

SCAL-1600 1.5 * 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 Standardization Manual.

Prerequisite. CBT-0019, FAM-1107.

External Syllabus Support. WST/APT.

CAL-1601 1.5 * R,MR 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
Power settling(Vortex Ring State)
Settling with power (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 Standardization Manual.

Prerequisite. FAM-1111

Range Requirements. Approved CAL/MAL site.

CAL-1602 1.5 * 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 Standardization Manual.

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 * 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 FRS Standardization Manual.

Prerequisite. FAM-1202,CAL-1601 and based off of simulator availability SCAL-1600

Range Requirements. Approved CAL/MAL site

CAL-1604 1.5 * 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 FRS Standardization Manual.

Prerequisite. FORM-1502, CAL-1602, and CAL-1603.

Range Requirements. Approved CAL/MAL site.

2.10.11 External Loads (EXT)

2.10.11.1 Purpose. To develop skills necessary for external cargo operations.

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

2.10.11.3 Crew Requirement. IP/RAC/CC/AO.

2.10.11.4 External Syllabus Support. Helicopter Support Team (HST), single and dual point external load(s) as required.

SEXT-1700 2.0 * 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

Performance Standards. Per CH-53 NATOPS and Standardization Manual.

Prerequisite. CBT-0024

External Syllabus Support. WST/APT with Aircrew External Trainer if available

EXT-1701 1.5 * 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
Power settling/settling with power
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

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 4-23E and Multi-Service Helicopter Sling Load Manual, and Standardization Manual.

Prerequisite. CAL-1601 and EXT-1700

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST and single point load

EXT-1702 1.5 * R NS A 1 CH-53

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 4-23E and Multi-Service Helicopter Sling Load Manual, and Standardization Manual.

Prerequisite. CAL-1603 and EXT-1701

Range Requirements. CAL/MAL site

External Syllabus Support. HST single point load

EXT-1703 1.5 * R,MR D A 1 CH-53E

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
CG load indicator system

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 4-23E and Multi-Service Helicopter Sling Load Manual, and FRS Standardization Manual.

Prerequisite. EXT-1701

Range Requirements. CAL/MAL site

External Syllabus Support. HST and dual point load

EXT-1704 1.5 * 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 FRS Standardization Manual.

Prerequisite. EXT-1702 and EXT-1703

Range Requirements. CAL/MAL site

External Syllabus Support. HST and dual point load

2.10.12 Terrain Flight (TERF)

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

2.10.12.2 General

2.10.12.2.1 T&R Program Manual requires a designated TERF instructor for all initial TERF flights.

2.10.12.2.2 ANTTP 3-22.3-CH53 Tactical Employment contains all maneuver descriptions, and ACAD-2011 explains all maneuvers.

2.10.12.2.3 T&R Program Manual establishes all currency requirements/TERF altitude limitations.

2.10.12.2.4 The RAC shall complete academic training prior to commencing the TERF flight syllabus.

2.10.12.3 Crew Requirement. IP/RAC/CC/AO.

2.10.12.4 Ground Training. Pilots shall complete ACAD-2011 "ASD TERRAIN Flight."

STERF-1800 1.0 * 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 Standardization Manual.

Prerequisites. ACAD-2011 (TERF class)

Range Requirements. TERF maneuver area/route and CAL/MAL site

TERF-1801 1.5 * R D A 1 CH-53E

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

2.10.13 Review (REV)

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

2.10.13.2 Crew Requirement. IP/RAC/CC.

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

SREV-1900 1.5 * R S WST/APT

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 FRS Standardization Manual. RAC is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. FAM-1119

Range Requirements. CAL/MAL site

REV-1901 1.5 * R D A 1 CH-53E

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 Standardization Manual. RAC is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. SREV-1900

Range Requirements. CAL/MAL site.

2.10.14 Core Skill Introduction Check (CSIX)

2.10.14.1 Purpose. To demonstrate proficiency in performing the duties as a core skill introduction copilot per CH-53 NATOPS and appropriate pubs.

2.10.14.2 General

2.10.14.2.1 The RAC is responsible for all maneuvers and emergency procedures in the Core Skill Introduction phase.

2.10.14.2.2 A CH-53 NATOPS qualified instructor shall evaluate this flight.

2.10.14.3 Crew Requirement. IP/RAC/CC.

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

CSIX-1902 2.0 * R,MR D E A 1 CH-53E

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

Performance Standards. Per CH-53 NATOPS and Standardization Manual.

Prerequisite. Open and Closed book NATOPS exams

Range Requirements. CAL/MAL site

2.11 CORE SKILL PHASE (2000)

2.11.1 Purpose. To introduce and develop proficiency in the execution of Core Skills required as a pilot 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 pilot to the level required to conduct assigned Mission Skills.

2.11.2 General

2.11.2.1 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

FCLP-2710 & 2742

TAC-2910 & 2911

2.11.2.2 All initial and refresher 2000-6000 level simulated events require a uniformed IP with appropriate designations. Any subsequent attempts at that event may be done single piloted.

2.11.2.1 Stages. The following stages are included in the Core Skill Phase of training:

CORE SKILL PHASE	
PAR NO.	**STAGE NAME**
2.11.3	Familiarization/Formation/Instruments (FAM/FORM/INST)
2.11.4	Confined/Mountainous Area Landings (CAL/MAL)
2.11.5	Terrain Flight (TERF)
2.11.6	Externals (EXT)
2.11.7	Ground Threat Reaction (GTR)
2.11.8	Helicopter Air to Air Refueling (HAAR)
2.11.9	Field Carrier Landing Practice (FCLP)
2.11.10	Aerial Gunnery (AG)
2.11.11	Tactics (TAC)
2.11.12	NS HLL (HLL) (Contained within other stages)
2.11.13	NS LLL (LLL) (Contained within other stages)

2.11.2.2 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

2.11.2.3 Ground/Academic Training

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

2.11.2.3.2 The Core Skill 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.

2.11.2.3.3 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:

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

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

http://www.mawts1.usmc.smil.mil/

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

Academic: See event
Flight: CSIX-1902
Designation/Qualification: H2P

2.11.3 Familiarization/Formation/Instruments (FAM/FORM/INST)

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

2.11.3.2 General

2.11.3.2.1 Pilots will find familiarization, formations and maneuver descriptions in the NATOPS, Standardization Manual and ANTTP 3-22.3 CH-53.

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

2.11.3.2.3 BIP required for all initial or refresher flights.

2.11.3.3 Crew Requirement. FAM/INST-2100: P/P. DAY HUD/FAM/CAL: P/P. FAM/INST-2105: P/P/CC/AO FORM 2110: P/P/CC/AO.

2.11.3.4 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.

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

Academic: N/A

Flight: CSIX-1902

Designation/Qualification: H2P

SFAM-2100	1.5	90	R,M	(N)	S/A	WST/APT

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. CSIX-1902

SFAM-2101 1.5 * R D S/A 1 CH-53E/WST/APT

Goal. Introduce and develop proficiency ANVIS-24 day (HUD).

Requirement

Instructor: BIP required for initial flights or refreshers

Discuss:
- Same as FAM/INST-2100
- CRM utilizing ANVIS-24 day (HUD)
- ANVIS-24 Heads-Up Display Operation
- Limitations
- Switchology
- Functionality/Image
- HNVS

Introduce:
- Same as FAM/INST-2100
- 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.

Prerequisite. Same as FAM/INST-2100

Range Requirements. CAL/MAL site

FAM-2105 1.5 365 R,M (N) A 1 CH-53E

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 R,M D A 2 CH-53E

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 ANTTP 3-22.3-CH53. Successfully execute inadvertent IMC breakup and rendezvous IAW ASTACSOP.

Prerequisite. ACAD-2005, FAM-2105

2.11.4 Confined/Mountainous Area Landings (CAL/MAL)

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

2.11.4.2 General

2.11.4.2.1 Pilots may find a description of these maneuvers in the CH-53 NATOPS, Standardization Manual and ANTTP 3-22.3-CH53.

2.11.4.2.2 BIP required for all initial or refresher flights.

2.11.4.3 Crew Requirement. CAL-2210-2112: P/P/CC.

2.11.4.4 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.

2.11.4.5 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-2210 1.5 365 R D A 1 CH-53E

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
Power settling
Settling with power
Low altitude emergencies
Loss of visual reference during landing and takeoff
Engine emergencies
Obstacle clearance
High gross weight takeoffs/landings
Maneuvering at high gross weight/density altitude (GW/DA)
High AOB turns/aerodynamic performance
HNVS capabilities and limitations
LZ Diagram briefing and planning considerations

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. Pilot shall fly pattern within 50’ and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point. 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.

Prerequisites. FAM/INST-2105

Range Requirements. CAL/MAL site

CAL-2211	1.5	365	R,M	D	A	2 CH-53E

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

Performance Standards. Pilot shall fly pattern within 50' and 10 kts of briefed altitude/airspeed. Land within 2 rotors of designated landing point (lead) and maintain section integrity during approach and landing (wingman). Conduct a minimum of 5 landings as lead and 5 landings as wingman. Maintain safe obstacle clearance.

Prerequisites. FORM-2110 and CAL-2210

Range Requirements. CAL/MAL site.

2.11.5 Terrain Flight (TERF)

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

2.11.5.2 General

2.11.5.2.1 TERF rules of conduct are IAW T&R Program Manual and local SOPs. A description of all TERF maneuvers can be found in ANTTP 3-22.3-CH53.

2.11.5.2.1 A PUI is TERF qualified when the following flights have been completed: ACAD-2011-2013, TERF-2310 and TERF-2311.

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

2.11.5.3 Crew Requirement. P/P/CC/AO.

2.11.5.4 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.

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

Academic: ACAD-2011

Flight: FAM-2105

Designation/Qualification: H2P

TERF-2310 1.5 * D A 1 CH-53E

Goal. Conduct single ship TERF maneuvers and navigation.

Requirements

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

Discuss:

TERF profiles and maneuvers IAW ANTTP 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 (N-PFPS)
Orientation techniques
Map preparation
Maneuvering at low altitude and high gross weight/high density altitude
High AOB turns/aerodynamic performance
Low altitude emergencies
Obstacle clearance

Aircraft navigation system

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. Conduct at least 1 full COMM and 1 no COMM lead change.

Prerequisites. ACAD-2011, FAM-2105

Range Requirements. Approved TERF maneuver area/route

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

Goal. Conduct section TERF maneuvers and navigation.

Requirements

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

Discuss:
Same items as in TERF-2310, as it applies to section TERF concepts
Tactical flight considerations per ANTTP 3-22.3-CH53
Tactical formation maneuvers in a TERF environment per ANTTP 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.

Range Requirements. Approved TERF maneuver area/route.

2.11.6 External Loads (EXT)(2400)

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

2.11.6.2 General

2.11.6.2.1 Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTTP series and MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual.

2.11.6.2.2 BIP required for EXT-2400, 2410-11, and 2441 initial or refresher flights.

2.11.6.2.3 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.

2.11.6.3 Crew Requirement. P/P/CC/AO.

2.11.6.4 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.

2.11.6.5 The following events/designations are prerequisites prior to the commencement of the External stage:

Academic: ACAD-2014

Flight: CSIX-1902 for sims or FAM-2210 for flights

Designation/Qualification: H2P

SEXT-2400 1.5 * 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. 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. CSIX-1902, ACAD-2014

External Syllabus Support. WST/APT

EXT-2410 1.5 * 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

Power settling
Emergency procedures during external operations
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

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. 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

Range Requirements. Approved CAL/MAL site.

External Syllabus Support. HST, single point loads.

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

Goal. Conduct dual point external operations (53E).

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 * R NS A 1 CH-53E

Goal. Conduct NS HLL single point external operations.

Requirements

Instructor: NSI required for initial flights, refresher or when not NS qualified in HLL conditions.

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

Range Requirements. Approved CAL/MAL site

External Syllabus Support. HST, single point load

EXT-2421 1.5 180 R,M NS A 1 CH-53E

Goal. Conduct NS HLL dual point externals (53E).

Requirements

Instructor: NSI required for initial flights, refresher or when not NS qualified in HLL conditions.

Discuss: Same as EXT-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-2411.

Prerequisite. HLL-2220 and EXT-2411

Range Requirements. CAL/MAL site

External Syllabus Support. HST, dual point load

EXT-2430 1.5 180 R,M NS A 1 CH-53E

Goal. Conduct LLL NS external operations, dual point preferred.

Requirements

Instructor: NSI required for initial flights, refresher or when not NS qualified in LLL conditions.

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. 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 and +/- 10 degrees of assigned heading.

Prerequisites. NSQ-HLL, EXT-2420 and 2421, CAL-2230

Range Requirements. CAL/MAL site

External Syllabus Support. HST and single or dual point load

EXT-2441 1.5 365 R,M (NS) A 1 CH-53E

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. 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

2.11.7 Ground Threat Reaction (GTR)

2.11.7.1 Purpose. To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics and on-board weapons systems to evade ground-to-air threats.

2.11.7.2 General

2.11.7.2.1 Initial GTR-2500 and 2540 shall be conducted in daytime conditions.

2.11.7.2.2 WTI or DMI is required for initial flights or refreshers.

2.11.7.2.3 GTR events shall be flown with operational ASE, door installed at a minimum (rounds and expendables optional), whenever practical.

2.11.7.3 Crew Requirement. P/P/CC/AO.

2.11.7.4 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.

2.11.7.5 The following events/designations are prerequisites prior to the commencement of the Ground Threat Reaction stage:

Academic: ACAD-2016, MAWTS-1 GTR Program Guide

Flight: TERF-2311

Designation/Qualification: H2P

SGTR-2500 1.5 * (NS) S WST/APT

Goal. Introduce ground threat reactions and ASE.

Requirements

Instructor: WTI or DMI required for initial flights

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.

Prerequisites. 2016-2021, 2311

External Syllabus Support. WST/APT with operable ASE

GTR-2540 1.5 365 R,M (NS) A 2 CH-53E

Goal. Conduct ground threat reactions and ASE familiarization.

Requirements

Instructor: WTI or DMI required for initial flights, refreshers or when not NS qualified in the light level event is conducted.

Discuss:

- Operation of the ALE-47, AAQ-24 and AAR-47
- The strengths and weaknesses of each ASE system versus non-radar ground-based threats
- Backplate settings
- Magazine IDs
- MDF AND OFP
- CRM
- IR countermeasures
- Tactical maneuvering to counter surface to air threat
- Inter- and intra-aircraft communications and standard terminology
- Threat identification and rules of engagement
- 5 axioms of survival
- High, medium and low altitude tactics

Introduce:

Tactical maneuvering and ASE employment to counter the threat
Inter- and intra-aircraft communications and standard terminology

Review:
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.

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)

Ordnance. 60 flares

Range Requirements. Live Fire Range (as required), Expendable capable range. Approved TERF maneuver area/route

External Syllabus Support. Ground-based non-radar threat simulators required for initial qualification(e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, target lights).

2.11.8 Helicopter Air to Air Refueling (HAAR)

2.11.8.1 Purpose. To introduce HAAR.

2.11.8.2 General.

2.11.8.2.1 KC-130 support required for all HAAR training evolutions.

2.11.8.2.2 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-56B.

2.11.8.2.3 ARI required for initial flights and refreshers.

2.11.8.2.4 ARI must be an NSI for HAAR-2640 if PUI is not NSQ for the appropriate light level.

2.11.8.2.5 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.

2.11.8.3 Crew Requirement. P/P/CC/AO.

2.11.8.4 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.

2.11.8.5 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

SHAAR-2600 1.5 * D S 1 WST/APT

Goal. Conduct day HAAR.

Requirements

Instructor: ARI required for initial flights.

Discuss:
- ATP-56B
- 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:
- 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 * NS S 1 WST/APT

Goal. Conduct NS HAAR.

Requirements

Instructor:
ARI is required for initial flights. NSI/ARI required if not NS qualified in the light level event is conducted.

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. 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. HAAR-2600

External Syllabus Support. WST/APT

HAAR-2610 1.5 * D A 1 CH-53E

Goal. Conduct day HAAR, left hose preferred.

Requirements

Instructor: ARI required for initial flights.

Discuss: Same as HAAR-2600

Review: HAAR-2600

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. Initial qualification shall be performed right seat, left hose is preferred.

Prerequisite. FAM-2110, HAAR-2600

Range Requirements. Special use airspace

External Syllabus Support. 1 KC-130 tanker

HAAR-2611 1.5 180 R,M D A 1 CH-53E

Goal. Conduct day HAAR, left and right hose preferred.

Requirements

Instructor: ARI required for initial flights and refreshers

Discuss:
Same as HAAR-2600
Types of tanker rendezvous (per ATP-56B)

Introduce:
Refueling from both sides of the tanker if available
No COMM procedures

Review: HAAR-2610

Performance Standards. Same as AR-2610. Demonstrate the ability to perform all 5 positions from right seat, both left and right hose (if available).

Prerequisite. HAAR-2610

Range Requirements. Special use airspace

External Syllabus Support. 1 KC-130 tanker.

HAAR-2640 1.5 180 R,M NS A 1 CH-53E

Goal. Conduct night HAAR with NS.

Requirements

Instructor:

ARI required for initial flights and refreshers.

NSI/ARI is required if not NS qualified in light level event is conducted.

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.

Range Requirements. Special use airspace.

External Syllabus Support. KC-130 tanker.

2.11.9 Field Carrier Landing Practice (FCLP)

2.11.9.1 Purpose. To qualify pilots in day and NS FCLP operations.

2.11.9.2 General

2.11.9.2.1 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 OPNAVINST 3710.7.

2.11.9.2.2 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.

2.11.9.2.3 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-2742 requires an NSI when not NS qualified in light level event is conducted.

2.11.9.2.4 FCLP-2710 and FCLP-2742 shall be conducted to a suitable FCLP pad.

2.11.9.3 Crew Requirement. FCLP-2700: P/P. FCLP-2710: P/P/CC. FCLP 2742 P/P/CC/AO.

2.11.9.4 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.

2.11.9.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Field Carrier Landing Practice stage:

Academic: N/A
Flight: SFAM-2100
Designation/Qualification: H2P

SFCLP-2700 1.5 * (N) 2 WST/APT

Goal. Conduct day and NS simulated shipboard flight operations.

Requirements

Discuss:

CRM
Terminology
Shipboard day and night landing patterns
Shipboard instrument procedures
Shipboard emergency procedures
Blade/pylon fold procedures

Introduce:

The LHA and LHD day and night VFR landing patterns
TACAN and CCA approaches in IMC or night conditions

Performance Standards. Conduct all communications with HDC and Tower. Execute proper cockpit switchology. Remain oriented around the landing pattern relative to the BRC. Pilot shall fly pattern within 50’ and 10 kts of briefed altitude/airspeed. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat.

Prerequisite. SFAM-2100

External Syllabus Support. WST/APT

FCLP-2710	1.5	365	R,M	D	A	1 CH-53E

Goal. Conduct day FCLP.

Requirements

Discuss: Same as FCLP-2700

Introduce: FCLPs

Review: FCLP-2700

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. Conduct a minimum of 5 landings. Initial qualification shall be performed from the right seat. Conduct a minimum of 2 landings for refresher qualification.

Prerequisite. CAL-2210 and FCLP-2700

Range Requirements. FCLP pad

External Syllabus Support. FCLP pad

FCLP-2742	1.5	365	R,M	NS	A	1 CH-53E

Goal. Conduct NS FCLPs.

Requirements

Instructor: NSI required when not NS qualified in light level event is conducted

Discuss:

Same as FCLP-2740
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. 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-2710. If conducted under HLL conditions: CAL-2220. If conducted under LLL conditions: CAL-2230

Range Requirements. FCLP pad

External Syllabus Support. FCLP pad

2.11.10 Aerial Gunnery (AG)

2.11.10.1 Purpose. To introduce AG employment.

2.11.10.2 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.

2.11.10.2.1 Crew Requirements. P/P/CC/AO/G.

2.11.10.2.2 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.

2.11.10.2.3 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-2810	1.5	*	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 ANTTP 3-22.3-CH53
- Platform left, Platform right
- Firing in approach, landing, and departure profiles
- Landing profile with tail gun installed

Introduce:

- Ordnance loading, weapons preflight and operations, and post-flight
- Implementation of fire control voice commands, and fire discipline
- Range estimation and target engagement
- Flight profiles and weapons engagement per the ANTTP 3-22.3-CH53
- Landing profile with tail gun installed

Performance Standards. Demonstrate effective fire control voice commands and fire discipline. Maintain briefed flight profiles IAW

ANTTP 3-22.3-CH53. Demonstrate appropriate target engagement IAW ANTTP 3-22.3-CH53.

Prerequisites. FAM-2105, 2023-2026

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	R,M	NS	A	1 CH-53E

Goal. To introduce NS AG employment.

Requirements

Instructor: NSI required if not NS qualified in light level event is conducted

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.

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

2.11.11 Tactics (TAC)

2.11.11.1 Purpose. To plan, brief, execute, and debrief a tactical mission in a low to medium threat environment.

2.11.11.2 General

2.11.11.2.1 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.

2.11.11.2.2 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.

2.11.11.2.3 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.

2.11.11.3 Crew Requirement. P/P/CC/AO.

2.11.11.4 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.

2.11.11.5 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-2910 2.0 * D A 2 CH-53E

Goal. Conduct assault support tactical missions in a low threat environment.

Requirements
Discuss:
CRM
Planning based on METT-TSL
Route planning
Objective area planning
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
EMCON, TRANSEC, and COMSEC
Mission smartpack

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 ± 30 sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. CAL-2211, TERF-2311 (if flown in TERF regime), AG-2810(~.50 cal employed),2027-2730

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

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

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 ± 30 sec of L-Hour and within 2 rotors of prebriefed landing point.

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

2.11.12 NS High Light Level (HLL)

2.11.12.1 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.

2.11.12.2 General

2.11.12.2.1 Aircrew not NSQ HLL require supervision of an NSI for all events flown with NS.

2.11.12.2.2 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.

2.11.12.2.3 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.

2.11.12.3 Minimum Crew Requirements for all NS HLL flights. P/P/CC/AG/O.

2.11.12.4 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.

2.11.12.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the High Light Level stage:

Academic: ACAD-2031
Flight: FAM-2100 for HLL-2101, FORM-2110 for all others
Designation/Qualification: H2P

SHLL-2102 1.5 * R NS S/A WST/APT/CH-53E

Goal. Introduce the operation and capabilities of aircraft NS.

Requirements

Instructor: NSI required for initial flights

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.
HNVS FLIR AAQ-29 & AAQ-16

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 all NS.

Prerequisites. ACAD-2031, FAM-2100.

External Syllabus Support. WST/APT. If WST/APT unavailable, a static aircraft with APP power is acceptable.

HLL-2120 1.5 180 R NS A 2 CH-53E

Goal. Conduct NS formation flight and navigation.

Requirements

Instructor: NSI required for initial flights, refreshers or when not HLL qualified

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
N-PFPS Mission Planning
HNVS considerations

Introduce:

NS formation flight
NS tactical formation maneuvers
NS navigation to include GPS and HNVS checkpoint identification

Review: Combat Spread/Combat Cruise Formation principles

Performance Standards. Per ANTTP 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.

Prerequisites. FORM-2110 and SHLL-2102.

HLL-2220	1.5	180		NS	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

Instructor: NSI required for initial flights, refreshers or when not NS HLL qualified

Discuss:
- CRM
- Landing zone Lighting
- Cockpit lighting
- Low altitude emergencies
- NS failures
- Inadvertent IMC procedures
- Landings with reduced visibility
- Wave-offs
- HNVS capabilities and limitations
- Electro-Optic Tactical Decision Aid (EOTDA) data
- Solar Lunar Almanac Program (SLAP)
- Night fixation and scan techniques

Introduce:
- NS CALs/MALs
- NS low work

Review:
- FAM/INST-2101
- CAL-2210

Performance Standards. Same as CAL-2210.

Prerequisites. CAL-2210 and SHLL-2101.

Range Requirements. CAL/MAL site.

HLL-2221	1.5	180	R,M	NS	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

Instructor: NSI required for initial flights, refresher or when not HLL qualified

Discuss: *Same* as CAL-2211 and HLL-2220

Introduce:
- 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

Range Requirements. CAL/MAL site

HLL-2320	1.5	180		NS	A	1 CH-53E

Goal. Conduct single ship TERF maneuvers and navigation while using NS.

Requirement

Instructor: NSI required for initial flights or when not HLL qualified.

Discuss:

Same as TERF-2310.
TERF navigation considerations while using NS.
HNVS 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
HNVS 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.

Prerequisite. TERF-2310 and SHLL-2102.

Range Requirements. Approved TERF maneuver area/route.

HLL-2321	1.5	180	R,M	NS	A	2 CH-53E

Goal. Conduct section TERF maneuvers and navigation while utilizing NS.

Requirement

Instructor: NSI required for initial flights, refreshers or when not HLL qualified

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.

Range Requirements. Approved TERF maneuver area/route.

HLL-2920 2.0 365 R,M NS A 2 CH-53E

Goal. Conduct assault support tactical missions in a low threat environment at night.

Requirements

Instructor: NSI required for initial qualification, refresher or if PUI not proficient

Discuss:
Same as TAC-2910
NS planning, briefing, and execution considerations

Introduce: NS planning, briefing, and execution considerations

Review:
TAC-2910
HNVS 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)

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

2.11.13 NS Low Light Level (LLL)

2.11.13.1 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.

2.11.13.2 General

2.11.13.2.1 Aircrew not NSQ LLL require supervision of an NSI for all events flown with NS.

2.11.13.2.2 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.

2.11.13.2.3 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.

2.11.13.3 Crew Requirements for all NS LLL flights. P/P/CC/AGO.

2.11.13.4 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.

2.11.13.5 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-2230 1.5 180 NS 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

Instructor: NSI required for initial flights or when not LLL qualified

Discuss:
Same as CAL-2220
LLL planning considerations

Introduce: Same as CAL-2220 under LLL conditions

Performance Standards. Same as CAL-2220.

Prerequisites. NSQ HLL.

Range Requirements. CAL/MAL site

LLL-2231 1.5 180 R,M NS 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

Instructor: NSI required for initial flights, refreshers or when not LLL qualified

Discuss:
Same as CAL-2221
LLL planning considerations

Introduce: Same as CAL-2221 under LLL conditions

Performance Standards. Same as HLL-2221.

Prerequisites. LLL-2230.

Range Requirements. CAL/MAL site.

LLL-2330 1.5 180 NS A 1 CH-53E

Goal. Conduct single ship TERF maneuvers and navigation under LLL conditions.

Requirement

Instructor: NSI required for initial flights or when not LLL qualified

Discuss:
Same as HLL-2320
LLL planning considerations
Introduce:
Same as HLL-2320 under LLL conditions

Performance Standards. Same as HLL-2320.

Prerequisites. NSQ HLL.

Range Requirements. Approved TERF maneuver area/route.

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

Goal. Conduct section TERF maneuvers and navigation under LLL conditions.

Requirements

Instructor: NSI required for initial flights, refreshers or when not LLL qualified

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

Prerequisite. LLL-2330

Range Requirements. TERF maneuver area/route

LLL-2930 2.0 365 R,M NS A 2 CH-53E

Goal. Conduct assault support tactical missions in a medium threat environment during LLL conditions.

Requirements

Instructor: NSI required for initial flights, refreshers or when not LLL qualified

Discuss:
Same as TAC-2911 and TAC-2920
LLL planning considerations
Effects of ordnance delivery on NS

Review: TAC-2911 and TAC-2920

Performance Standards. Same as TAC-2911

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

2.12 MISSION SKILL PHASE (3000)

2.12.1 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.

2.12.2 General

2.12.2.1 For initial, refresher, or when the aircrew under instruction are not proficient in a particular Mission Skill, training codes shall be given by an instructor pilot that is proficient in that Mission Skill code(s). Mission skill codes should be given to all those aircrew (Pilots, Crew Chief, AO) within the aircraft that meet the prerequisite. Additionally, for larger

flights, 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.

2.12.2.2 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 do 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 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 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.

2.12.2.3 Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL and Aerial Gunnery Stage Complete.

2.12.2.4 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.

2.12.2.5 Multiple Mission Skill training events may be logged per sortie (e.g. EXP-3240, AT-3340, AD-3540) 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 (e.g. for pilots: EXP-3240, AT-3340, AD-3540, LLL-2930, EXT-2430, EXT-2440, EXT-2441 and LLL-2331).

2.12.2.6 The PUI will log the TAC code and the instructor will log both the TAC code and the Mission Skill event(s) that applies. Initial TAC codes 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.

2.12.2.7 Mission Skill events shall be flown with operational ASE, .50 cals (as required for the tactical scenario) installed at a minimum (rounds and expendables optional), whenever practical.

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

2.12.2.9 As of the signing of this manual, the current HMH Core MCTs are as follows:

Aviation Operations from Expeditionary Shore-Based Sites (MCT 1.3.3.3.2) (EXP)

Combat Assault Transport (MCT 1.3.4.1) (AT)

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)

2.12.3 Crew Requirements. P/P/CC/AG

2.12.4 Academic Training

2.12.4.1 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.

2.12.4.2 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.

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

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

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

http://www.mawts1.usmc.smil.mil/

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

Academic: See event
Flight: AG-2840, External Stage Complete
Designation/Qualification: NSQ-LLL

2.12.6 Flight Events

EXP-3140 2.0 365 R,M (N) A/S CH-53E/WST/APT TEN+

Goal. Demonstrate the capability to operate from a shore-based site under a low to medium threat environment. Marine aviation units maintain the capability to operate from expeditionary shore-based sites (in line with unit/platform capabilities) to include Forward Operating Bases (FOBs), Expeditionary Airfields (EAFs), Forward Arming and Refueling Points (FARPS), austere forward operating sites, Tactical Landing Zones (TLZ), Helicopter Landing Zones (HLZs), etc. The Marine Air Traffic Control Mobile Team (MMT) can support operations at expeditionary shore-based sites by providing initial rapid response air traffic control (ATC), and command, control, and communications (C3). (JP 3-1, NDP 1, MCWP 3-2, MCWP 3-25.8)

Requirements

Instructor: NSI required when not NS qualified in light level event is conducted.

Discuss:

Same as 2920.
MMT operations.
EAF, FOB, FARP, LAAGER site operations.

Performance Standard. Plan, brief and execute a tactical mission to or from expeditionary shore-based (Airbase, EAF, FOB, COB, FARP, LAAGER site). Ensure aircrew properly plan for and demonstrate knowledge of the requirements of operating in an austere environment.

Prerequisites. 2930~LLL, GTR-2540, AG-2840, ACAD-3000-3001, ACPM 8300, 8310 and 8311

Ordnance. IAW Phase

Range Requirement. Live fire and expendable range as required

External Syllabus Support. ATC, DASC, ASLT and/or MMT for airspace control is preferred. AGS for expeditionary shore-based site setup preferred

AT-3240 2.0 365 R,M (N) A/S CH-53E/WST/APT TEN+

Goal. Demonstrate the capability to conduct 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 3-2, MAWTS-1).

Requirements

Instructor: NSI required when not NS qualified in light level.event conducted.

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. 2930~LLL, GTR-2540, AG-2840, 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 2.0 365 R,M (N) A/S 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 3-2, 3-11.4, 3-21.2, 4-1, 4-11, 4-11.3, NDP-4, NWP 4-01, NAVSUP PUB Series)

Requirement

Instructor: NSI required when not NS qualified in light level event is conducted.

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. 2930~LLL, EXT-2430, GTR-2540, AG-2840, 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	365	R,M	(N)	A/S	CH-53E/WST/APT TEN+

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 compliment of security, ground search, and medical personnel. (JP 1, 3-0, 3-50.2, MCWP 2-6, 3-2, 3-11.4, 3-24, 3-25.4, NDP 1, NWP 3-05)

Requirements

Instructor: NSI required when not NS qualified in light level event is conducted.

Discuss:

TRAP template from AS TACSOP
ISR employment
Rescort considerations
Rescue Vehicle responsibilities
ISOPREP verification considerations
RMC 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. 2930~LLL, EXT-2430, EXT-2441, GTR-2540, AR-2640, AG-2840, 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 2.0 365 R,M (N) A/S CH-53/WST/APT TEN+

Goal. Demonstrate the ability to conduct an air evacuation operation in a low to medium threat environment. Air evacuation is the transportation of personnel and equipment from areas of operations to secure rear areas, to include casualty evacuations (CASEVAC), extraction of forces, or civilians. Transport helicopters, tiltrotor, and fixed-wing transport aircraft perform air evacuations. (JP 3-10.1, MCDP 1-0, MCWP 3-2, 3-11.4, 3-16, 3-24, 3-25, 3-27, 3-36)

Requirements

Instructor: NSI required when not NS qualified in light level event is conducted.

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. 2930~LLL, GTR-2540, AG-2840, 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

2.13 CORE PLUS SKILL PHASE (4000)

2.13.1 Purpose. To introduce and develop proficiency in the execution of the Core Plus Skills required as a pilot 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.

2.13.2 General

2.13.2.1 The following events within this phase require a Basic Instructor Pilot (BIP) for all initial/Refresher flights:

HIE-4110, 4140, 4141
CBRN-4600
TAC-4940 & 4942(if done during the day)

2.13.2.2 All Mission Plus Skill events shall follow the guideline of the Mission Skill section.

2.13.2.3 Stages. The following stages are included in the Mission Plus Skill Phase of training.

CORE PLUS SKILL PHASE	
PAR NO.	**STAGE NAME**
2.13.5	Helicopter Insertion and Extraction Techniques (HIE)
2.13.6	Externals (EXT)
2.13.7	Ground Threat Reaction (GTR)
2.13.8	Defensive Measures (DM)
2.13.9	Chemical, Biological, Radiation, Nuclear (CBRN)
2.13.10	Carrier Qualification (CQ)
2.13.11	Tactics & Mission Plus Skills (TAC)

2.13.2.4 Conditions. Within the stages all training codes are further broken down according to ambient conditions.

(XX00) Sim
(XX10) Daylight
(XX20) High Light Level
(XX30) Low Light Level
(XX40) Can be done High or Low Light Level

2.13.3 Ground/Academic Training

2.13.3.1 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.

2.13.3.2 The Core Plus Skill 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.

2.13.3.3 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:

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

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

http://www.mawts1.usmc.smil.mil/

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

Academic: See event
Flight: See event
Designation/Qualification: H2P

2.13.5 Helicopter Insertion & Extraction Techniques (HIE)

2.13.5.1 Purpose. To introduce HIE methods required in executing special operations.

2.13.5.2 General. The pilots shall conduct a brief with the supported unit.

2.13.5.3 Crew Requirements. P/P/CC/AO.

2.13.5.4 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.

2.13.5.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Helicopter Insertion & Extraction Techniques:

Academic: See event
Flight: CAL-2210
Designation/Qualification: H2P

HIE-4110 1.5 365 R,M D A 1 CH-53E

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 to include NS emergencies
Vertigo and visual illusions

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-2310

Range Requirements. Approved helocast drop zone

External Syllabus Support. Jump master, safety boat and safety personnel

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

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

Introduce:
Techniques for inserting personnel by fastrope, rappelling, or SPIE
Signals/communications with HRST master
Precision hover

Performance Standards. Execute approach and hover within ± 5′ of intended altitude and within 2 meters of intended spot.

Prerequisites. CAL-2210 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	*	(NS)	A	1 CH-53E

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

Introduce:

- Techniques for inserting personnel by para ops
- Signals/communications with jump master

Performance Standards. Fly within ± 50′ of designated altitude and ± 5 kts of designated airspeed.

Prerequisites. CAL-2210 for day. NSQ for appropriate light level

Range Requirements. Approved drop zone

External Syllabus Support. Jump master and ground safety personnel

2.13.6 Terrain Flight External Loads (EXT)

2.13.6.1 Purpose. To develop skills necessary for operating with external loads in all ambient conditions in the terrain flight regime.

2.13.6.2 General

2.13.6.2.1 Review operational and safety considerations discussed in the appropriate NATOPS Flight Manual, ANTTP series and MCRP 4-11.3E and Multi-Service Helicopter Sling Load Manual.

2.13.6.2.2 TERFI required for EXT-4412 initial, refresher or when not TERF qualified.

2.13.6.2.3 NSI required for EXT-4440 initial, refresher or when not NS qualified in light level event is conducted.

2.13.6.2.4 Crew Requirement. P/P/CC/AO.

2.13.6.3 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.

2.13.6.4 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

SEXT-4412 1.5 365 R D S/A CH-53E/WST/APT/EAT

Goal. Conduct external flight in the TERF profile

Requirement

Instructor: TERFI required for all initial flights and refresher

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. 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.

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 R,M NS S/A CH-53E/WST/APT/EAT

Goal. Conduct external flight in the TERF profile utilizing NS.

Requirements

Instructor: NSI required for initial flights, refreshers or when not NS qualified in the light level event is conducted

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

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.

2.13.7 Ground Threat Reaction (GTR)

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

2.13.7.2 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.

2.13.7.3 Crew Requirement. P/P/CC/AO.

2.13.7.4 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.

2.13.7.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the stage Ground Threat Reaction stage:
Academic: GTR program guide and ACAD-4000
Flight: TERF-2311
Designation/Qualification: TERF Qualified

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

Goal. Conduct GTR while employing ASE against various ground-based radar threats.

Requirements. Operable APR-39

Instructor: DMI or WTI for initial flights, refreshers. NSI/DMI is required if not NS qualified in light level event is conducted

Discuss:
- Operations of the ALE-47, APR-39, AAQ-24, AAR-47 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

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.

Prerequisite. TERF-2311, GTR-2500 ACAD-4000

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.

2.13.8 Defensive Measures (DM)

2.13.8.1 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.

2.13.8.2 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.

2.13.8.3 Crew Requirements. P/P/CC/AO.

2.13.8.4 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.

2.13.8.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Defensive Measures stage:

Academic: DM program guide. ACAD-4000-4005
Flight: TERF-2311
Designation/Qualification: TERF Qualified

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

Goal. Conduct section DM against a rotary wing aggressor.

Requirements

Instructor: DMI required for initial flights, refreshers or when not DM qualified.

Discuss:

- CRM
- Standard terminology
- Five axioms of survival
- DM training rules
- Ps and EM
- DM game planning
- Friendly weapons employment
- ASE utilization
- 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.

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	R,M	D	A	2 CH-53E

Goal. Conduct section DM against a fixed wing aggressor.

Requirements

Instructor: DMI required for initial flights, refreshers or when not DM qualified.

Discuss:
CRM
Standard terminology
Five axioms of survival
Ps and EM
DM game planning
Friendly weapons employment
ASE utilization
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.

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.

2.13.9 Chemical, Biological, Radiological and Nuclear (CBRN)

2.13.9.1 Purpose. To conduct flight operations while wearing NBC protective equipment.

2.13.9.2 General. For the safe execution of initial CBRN flights, one pilot and one air crewman shall remain unmasked.

2.13.9.3 Crew Requirement. P/P/CC if done in the aircraft.

2.13.9.4 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.

2.13.9.5 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

SCBRN-4600 1.5 * (N) S/A 1 CH-53E/WST/APT TEN+

Goal. Conduct flight in a simulated CBRN environment.

Requirements

Instructor: NSI required is not NS qualified in light level event is conducted

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.

Prerequisite. CAL-2105 for day, CAL-2220 for HLL, CAL-2230 for LLL

Range Requirements. CAL/MAL site

2.13.10 Carrier Qualification (CQ)

2.13.10.1 Purpose. To qualify pilots for day and NS shipboard operations. The term “carrier qualification” encompasses all shipboard landing operations.

2.13.10.2 General

2.13.10.2.1 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 OPNAVINST 3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

2.13.10.2.2 5 day and 5 night FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53E NATOPS, Chapter 8, Shipboard Procedures.

2.13.10.2.3 Initial day/night carrier qualification shall be made under ideal weather conditions to include a visible horizon.

2.13.10.2.4 Each initial or refresher instructional flight requires a minimum of 5 CQs; additional CQs as required to demonstrate proficiency.

2.13.10.2.5 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-2742 requires an NSI when not NS qualified in the light level event is conducted.

2.13.10.3 Crew Requirement. CQ-4711: P/P/CC/AO. CQ- 4743: P/P/CC/AO.

2.13.10.4 Academic Training. PUI should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and OPNAVINST 3710.7 regarding shipboard operations.

2.13.10.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Carrier Qualification stage:

Academic: N/A

Flight: 5 day and 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

CQ-4711 1.5 365 R D A 1 CH-53E

Goal. Introduce day CQs.

Requirements

Discuss:

- 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-2710.

Prerequisites. FCLP-2710

External Syllabus Support. Helicopter capable ship

CQ-4743 1.5 365 R,M NS A 1 CH-53E

Goal. Conduct NS CQs.

Requirements. Initial CQ-4743 shall be conducted under HLL conditions.
Instructor: NSI required when not NS qualified in light level event is conducted.

Discuss:
Same as FCLP-2742
Scan techniques
NS aircraft/deck lighting
NS landing techniques
NS emergencies

Introduce: NS CQs.

Performance Standards. Same as FCLP-2742.

Prerequisites. 2920~HLL, FCLP-2742 and CQ-4711

External Syllabus Support. NS compatible helicopter capable ship

2.13.11 Tactics (TAC)

2.13.11.1 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.

2.13.11.2 General. Pilots should use the ANTTP 3-22.3-CH53 and the ASTACSOP as a source document for planning. Pilots may conduct these flights in high to low threat level conditions, and/or at night if the participating pilots have completed the prerequisites and NSQ designation.

2.13.11.3 Crew Requirements. P/P/CC/AO.

2.13.11.4 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.

2.13.11.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Core Plus Tactics stage:

Academic: N/A
Flight: GTR-2540, AG-2840
Designation/Qualification: H2P

TAC-4940 2.0 365 R,M (NS) A 3+ ACFT

Goal. Conduct division tactics in a low-to-medium threat environment.

Requirements
Instructor: NSI required when not NS qualified in the light level event is conducted

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 AS TACSOP and ANTTP 3-22.3-CH53. 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. 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 ± 30 sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisites. 2920~HLL, 2930~LLL, TAC-2911, GTR-2540, AG-2840

Ordnance. 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	R,M	NS	A	2 CH-53E

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

Requirements

Instructor: NSI required when not NS qualified in light level event is conducted.

Discuss:
Effects of ambient lighting on NS in an urban area
Urban navigation
Targeting and fire support coordination in an urban area

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 using appropriate scale maps. Demonstrate proficiency with aircraft navigation systems.

Prerequisites. 2920~HLL, 2930~LLL, TAC-2911, ACAD-4007, GTR-2540, AG-2840

Range Requirements. CAL/MAL site in urban environment

External Syllabus Support. Assault support escort aircraft if available

TAC-4942	4.0	365	R,M	(NS)	A	2 CH-53E

Goal. Conduct a long range mission in a low-to-medium threat environment utilizing HAAR, TFBDS, and/or FARP/RGR.

Requirements

Instructor: NSI required when not NS qualified in light level event is conducted

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 AS TACSOP and ANTTP 3-22.3-CH53. Remain oriented IAW RW TACSOP Magellan criteria while navigating while using 1:250,000 and 1:50,000 scale maps. Utilize fuel from external source (TBFDS may be used). Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within ± 30 sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. ACAD-4006, 2920~HLL, 2930~LLL, GTR-2540, AG-2840

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 AR

External Syllabus Support. Assault support escort aircraft if available. KC-130 Tanker. AGS as required

2.14 MISSION PLUS SKILL PHASE

2.14.1 Purpose. To plan, brief, and execute Mission Plus events in a low to medium threat environment.

2.14.2 General

2.14.2.1 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 that is proficient in that Mission Plus Skill. Mission Plus Skill events should be given to all those aircrew (Pilots, Crew Chief, AO) 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.

2.14.2.2 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 do 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, AT-3340, and RAID-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.

2.14.2.3 Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL.

2.14.2.4 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.

2.14.2.5 Multiple Mission Skill and Mission Plus Skill training events may be logged per sortie (e.g. EXP-3240, AT-3340, AD-3540, RAID-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 (e.g. for pilots: EXP-3240, AT-3340, AD-3540, RAID-4980, ADGR-4981, LLL-2930, EXT-2430, EXT-2440, EXT-2441 and LLL-2331).

2.14.2.6 The PUI will log 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.

2.14.2.7 Mission Plus Skill events shall be flown with operational ASE, .50 cals (as required for the tactical scenario) installed at a minimum (rounds and expendables optional), whenever practical.

2.14.2.8 Initial attempts to complete Mission Skills and Mission Plus Skills should be made in the aircraft, subsequent attempts may be accomplished in the simulator.

2.14.2.9 As of the signing of this manual, the current HMH Core MCTs are as follows:

MCT 1.3.4.1.1 Conduct Airborne Rapid Insertion/Extraction (RAID)

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)

2.14.3 Crew Requirements. P/P/CC/AG.

2.14.4 Academic Training

2.14.4.1 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.

2.14.4.2 The Mission Plus Skill 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.

2.14.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Core Plus Tactics stage:

Academic: See event description

Flight: TAC-2930, GTR-2540, AG-2840

Designation/Qualification: NSQ-LLL

RIE-4980	2.0	365	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 3-2, 3-11.4, 3-24, MCRP 3-11.4A)

Requirements. Conduct a rapid insertion/extraction operation utilizing fast rope, rappelling, paraops, helocast, or special insertion and extraction techniques.

Instructor: NSI required when not NS qualified in the light level event is conducted.

Discuss: Same as TAC-2930

Performance Standard. Plan, brief and execute a tactical airborne rapid insertion/extraction mission. If a L-Hour is utilized arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Execute an approach and hover within +/- 5′ of intended altitude and within 10′ of intended spot and/or fly with +/- 50′ of designated altitude and +/- 5 kts of designated airspeed.

Prerequisite. 2930~LLL, GTR-2540, AG-2840, ACAD-4008-4010. Proficiency in HIE-4110 if helocast is utilized, HIE-4140 if SPIE, fast rope or rappelling is utilized, or HIE-4141 if paraops are utilized.

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 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

Instructor: NSI required when not NS qualified in the light level event is conducted

Discuss:

- TBFDS capabilities and considerations
- LZ Markings
- Arm/De-Arm procedures and ordnance considerations
- Site security
- Aircraft sequencing and airspace considerations

Performance Standard. Plan, brief and execute a tactical TBFDS refueling evolution. Calculate accurate fuel requirements; ensure aircraft integration and FARP site security.

Prerequisite. 2930-LLL, GTR-2540, AG-2840, 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 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 3-2)

Requirement

Instructor: NSI required when not NS qualified in the light level event is conducted.

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.

Prerequisite. 2930-LLL, 4711, 4743~HLL, GTR-2540, AG-2840 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.

2.15 INSTRUCTOR TRAINING PHASE (5000)

2.15.1 Purpose. This phase contains instructor workup and evaluations certification syllabus events.

2.15.2 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.

2.15.3 Academic/Ground Training

2.15.3.1 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.

2.15.3.2 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.

2.15.3.3 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:

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

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

http://www.mawts1.usmc.smil.mil/

2.15.4 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

2.15.5 Basic Instructor Pilot (BIP)

2.15.5.1 Purpose. To develop qualified instructor pilots for single ship or wingman events in the day familiarization, instrument, CAL, or external syllabus.

2.15.5.2 General

2.15.5.2.1 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.

2.15.5.2.2 The BIP syllabus shall be completed in conjunction with the HAC syllabus and is a prerequisite to HAC-6122.

2.15.5.2.3 All BIP instructional flights shall be conducted by a section leader or higher. 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.

2.15.5.2.4 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.

2.15.5.2.5 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.

2.15.5.2.6 BIP events may be combined with each other or another training event.

2.15.5.3 Crew Requirements

SBIP-5100 P/CP

SBIP-5101 P/CP

BIP-5110 P/P/CC/AO (as required)

2.15.5.4 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.

2.15.5.5 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

SBIP-5100	1.5	*	D	S/A	1 CH-53E/WST/APT

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 postflight 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	*	D	S/A	1 CH-53E/WST/APT

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, SPPC/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	*	D	A	1 CH-53E

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.

2.15.6 Terrain Flight Instructor (TERFI)

2.15.6.1 Purpose. To develop qualified instructor pilots for day terrain flight.

2.15.6.2 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.

2.15.7 Aerial Refueling Instructor (ARI)

2.15.7.1 Purpose. To develop qualified instructor pilots for HAAR events using a standardized flight training program.

2.15.7.2 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.

2.15.8 FRS Day Instructor Training (FRSI-E)

2.15.8.1 Purpose. To develop qualified instructor pilots for events using a standardized flight training program.

2.15.8.2 General

2.15.8.2.1 Fly IUT flights with a designated FRS Instructor Pilot.

2.15.8.2.2 Pilots undergoing instructor training should fly in the right seat.

2.15.8.2.3 All IUTs should complete every event of the IUT training syllabus.

2.15.8.3 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.

2.15.8.4 Prerequisites. The following events/designations are prerequisites prior to the commencement of the FRS instructor stage:

Academic: N/A
Flight: N/A
Designation/Qualification: Section Lead, TERFI.

FRSIE-5500 1.5 * 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 FRS Standardization Manual. 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.

SFRSIE-5502 2.0 * (N) S/A 1 CH-53E/WST/APT

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 FRS Standardization Manual.

Prerequisite: TERF-5202 and SL-6203

FRSIE-5503 1.5 * 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 FRS Standardization Manual.

Range Requirements. CAL/MAL site.

Prerequisites. FRSI-5500

FRSIE-5504 1.5 * 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 FRS Standardization Manual.

Prerequisites. FRSI-5500

FRSIE-5505 1.5 * 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 FRS Standardization Manual. 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

FRSIE-5506 1.5 * R (N) A 1 CH-53E A

Goal. Flight instructor standardization check.

Requirements
Discuss:
CRM
CH-53E limitations
Course Rules

FRS Standardization Manual
Instruction techniques

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. FRSI-5500 through FRSI-5505

2.15.9 Advanced Instructor Events

2.15.9.1 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).

2.15.9.2 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.

2.15.10 Flight Leadership Standardization Evaluator (FLSE)

2.15.10.1 Purpose. To designate qualified pilots as Flight Leadership Standardization Evaluators (FLSE) in accordance with the T&R Program Manual.

2.15.10.2 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.

2.15.11 Contract Instructor Training Stage (CIUT)

2.15.11.1 Purpose. To develop qualified contract instructor (CI) pilots for core skill introduction (1000 phase) day events using a standardized flight training program.

2.15.11.2 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.

2.15.11.2.1 CIs shall have at least 1000 hours total pilot time and, at a minimum, hold prior designation of aircraft commander in an H-53.

2.14.11.2.2 1000-level S, S/A, or A/S flights may be flown under the instruction of a designated CI.

2.15.11.2.3 5000-level CIUT flights shall be flown in the simulator under the instruction of a designated Standardization Pilot.

2.15.11.2.4 CIUTs should fly in the right seat.

2.15.11.2.5 Every event in the CIUT training syllabus shall be completed prior to designation as a CI.

2.15.11.2.6 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.

2.15.11.2.7 All CIUTs shall complete an Instrument Evaluation, to include all prerequisites in accordance with OPNAV 3710.7 and the NATOPS Instrument POI, prior to designation as a CI.

2.15.11.2.8 Annual requirements:

2.15.11.2.8.1 CRM ground class.

2.15.11.2.8.2 Instrument minimums and requirements (all requirements able to be met in simulator) in accordance with OPNAV 3710.7 and the NATOPS Instrument POI, to include an instrument evaluation given by a uniformed NATOPS Instrument Evaluator or Instructor.

2.15.11.2.8.3 Open and closed book NATOPS tests.

2.15.11.2.8.4 Annual NATOPS evaluation given by a uniformed NATOPS Evaluator or Assistant NATOPS Instructor in accordance with the NATOPS POI.

2.15.11.2.9 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.

2.15.11.2.10 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.

2.15.11.2.11 All initial 2000-6000 level simulated events require a uniformed IP.

2.15.11.3 Crew Requirement. IP/CIUT.

2.15.11.4 Academic/Ground Training. CBT 0001-0024, ACAD 0100-0109.

CIUT-5900	1.0	*	CIUTE	D	S	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 Standardization Manual.

Prerequisites. CBT and ACAD complete

External Syllabus Support. WST/APT

CIUT-5901 1.0 * CIUTE D S 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 Standardization Manual.

Prerequisites. CBT-0018-CIUTE

External Syllabus Support. WST/APT

CIUT-5902 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5901

External Syllabus Support. WST/APT.

CIUT-5903 1.0 * CIUTE D S WST/APT

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)
- Nf flex shaft failure

Practice:

- Aircraft emergencies.
- Previously introduced flight procedures.
- Normal cockpit procedures.

Performance Standards. Per CH-53 NATOPS and Standardization Manual.

Prerequisites. CIUT-5902

External Syllabus Support. WST/APT.

CIUT-5904 1.0 * CIUTE 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 Standardization Manual.

Prerequisites. CIUT-5903

External Syllabus Support. WST/APT

CIUT-5905 1.5 * CIUTE 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 Standardization Manual.

Prerequisites. CIUT-5904

External Syllabus Support. WST/APT.

CIUT-5906 1.0 * CIUTE D S WST/APT

Goal. Conduct Progress Check. Introduce communication skills IAW CRM techniques.

Requirement

Introduce:

Ground resonance procedure.
Power settling (vortex ring state).
Settling with power.
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 Standardization Manual.

Prerequisites. CIUT-5905

External Syllabus Support. WST/APT.

CIUT-5907 1.5 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5906

External Syllabus Support. WST/APT.

CIUT-5908 1.5 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5907

External Syllabus Support. WST/APT.

CIUT-5909 1.5 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5908

External Syllabus Support. WST/APT.

CIUT-5910	1.5	*	CIUTE	D	S	WST/APT

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 power settling and settling with power
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 Standardization Manual.

Prerequisites. CIUT-5909

External Syllabus Support. WST/APT.

CIUT-5911 1.5 * CIUTE N S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5910

External Syllabus Support. WST/APT.

CIUT-5912 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5911

External Syllabus Support. WST/APT

CIUT-5913 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5912

External Syllabus Support. WST/APT.

CIUT-5914 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5913

External Syllabus Support. WST/APT.

CIUT-5915 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5914

External Syllabus Support. WST/APT.

CIUT-5916 1.0 * CIUTE D S WST/APT

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 FRS Standardization Manual.

Prerequisites. CIUT-5915

External Syllabus Support. WST/APT

CIUT-5917 2.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5916

External Syllabus Support. WST/APT

CIUT-5918 1.5 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5917

External Syllabus Support. WST/APT

CIUT-5920 1.0 * CIUTE D S WST/APT

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 FRS Standardization Manual.

Prerequisites. CIUTD-5918

External Syllabus Support. WST/APT

CIUT-5921 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5920

External Syllabus Support. WST/APT

CIUT-5922 1.5 * CIUTE D S WST/APT

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
Power settling(Vortex Ring State)
Settling with power (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 Standardization Manual.

Prerequisite. CIUT-5921

External Syllabus Support. WST/APT

CIUT-5923 2.0 * CIUTE D 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

Performance Standards. Per CH-53 NATOPS and Standardization Manual.

Prerequisite. CIUT-5922

External Syllabus Support. WST/APT with Aircrew External Trainer if available

CIUT-5924 1.0 * CIUTE D S WST/APT

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 Standardization Manual.

Prerequisites. CIUT-5923

External Syllabus Support. WST/APT

CIUT-5925 2.0 * CIUTE D S WST/APT

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 FRS Standardization Manual. CIUT is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. CIUT-5900-5924

External Syllabus Support. WST/APT

CIUT-5926	2.0	*	CIUTE	D	S	WST/APT

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 Standardization Manual. CIUT is responsible for all emergency procedures in the NATOPS Manual.

Prerequisite. CIUT-5925

External Syllabus Support. WST/APT

CIUT-5927	2.0	*	CIUTE	D	S	WST/APT

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 Standardization Manual.

Prerequisite. Open and Closed book NATOPS exams; CIUT-5926

External Syllabus Support. WST/APT

CIUT-5931	1.5	*	CIUTE	D	S	WST/APT

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 FRS Standardization Manual. 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 * CIUTE D S WST/APT

Goal. Review all familiarization stage maneuvers at night.

Requirements
Discuss:
CRM
The night unaided environment

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual. 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 * CIUTE D S WST/APT

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 FRS Standardization Manual.

Prerequisites. CIUT-5932

External Syllabus Support. WST/APT

CIUT-5934 1.5 * CIUTE D S WST/APT

Goal. Review CAL instruction techniques.

Requirements
Discuss:
CRM
Comfort level

Review: All CAL stage maneuvers

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. CIUT-5933

External Syllabus Support. WST/APT

CIUT-5935	1.5	*	CIUTE	D	S	WST/APT

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 FRS Standardization Manual.

Prerequisites. CIUT-5934

External Syllabus Support. WST/APT

CIUT-5936	1.5	*	CIUTE	D	S	WST/APT

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 FRS Standardization Manual. 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	*	CIUTE	D	S	WST/APT

Goal. Flight instructor standardization check.

Requirements
Discuss:
- CRM
- CH-53E limitations
- Course Rules
- FRS Standardization Manual
- Instruction techniques

Performance Standards. Per CH-53E NATOPS and FRS Standardization Manual.

Prerequisites. Open and Closed Book NATOPS. CIUT-5936

External Syllabus Support. WST/APT

2.16 REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS (RQD) PHASE (6000)

2.16.1 Purpose. This phase contains standardized combat/leadership workup and evaluation events.

2.16.2 General

2.16.2.1 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.

2.16.2.2 Squadrons shall evaluate pilots for required flight leadership designations at the discretion of the squadron commanding officer per the criteria in the CH53 NATOPS Flight Manual, OPNAV 3710, and local SOPs.

2.16.2.3 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.

2.16.2.4 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.

2.16.2.5 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.

2.16.2.6 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.

2.16.2.7 Flight Leadership proficiency shall be tracked in M-SHARP, when completing the NAVFLIR.

2.16.3 Academic/Ground Training

2.16.3.1 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.

2.16.3.2 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.

2.16.3.3 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:

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

2.16.3.4 SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53, T&R:
http://www.mawts1.usmc.smil.mil/

2.16.4 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

2.16.5 CH-53 NATOPS POI

2.16.5.1 Purpose. To evaluate the airman's knowledge of aircraft systems, performance limitations, emergency procedures, flight and ground operations IAW OPNAV 3710.7 and CH-53 NATOPS.

2.16.5.2 General

2.16.5.2.1 NATOPS Instructors/Assistant Instructor shall conduct the NATOPS evaluation in accordance with OPNAV 3710.7 series and other applicable directives, instructions, and orders.

2.16.5.2.2 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.

2.16.5.2.3 NATOPS PUIs shall complete and have a graded Open Book and Closed Book prior to the commencement of the oral evaluation and flight event.

2.16.5.3 Crew Requirements. P/P/CC/AO (as required).

2.16.5.4 Academic Training. Open, closed book and oral evaluation IAW OPNAV 3710.7 and the CH-53 NATOPS.

NATOPS-6000 3.0 365 R,SC,M Open Book NATOPS Exam

Goal. Open book written examination to evaluate the airman's NATOPS knowledge IAW 3710.

Performance Standard. IAW OPNAV 3710.

NATOPS-6001 1.0 365 R,SC,M 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 OPNAV 3710 and CH-53 NATOPS.

Prerequisite. NATOPS-6000

NATOPS-6002 0.5 365 R,SC,M Oral NATOPS Exam

Goal. Oral examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53 NATOPS.

Performance Standard. IAW OPNAV 3710 and CH-53 NATOPS.

Prerequisite. NATOPS-6001

NATOPS-6004 1.0 30 R,SC,M Monthly EP Exam

Goal. Monthly NATOPS Emergency Procedure Examination to evaluate the airman's Knowledge of Emergency Procedures.

Performance Standard. IAW OPNAV 3710 and CH-53 NATOPS.

NATOPS-6100 1.5 365 R,SC,M (N) E A/S 1 CH-53E/WST/APT

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 OPNAV 3710.7. Demonstrate comprehensive knowledge and understanding of NATOPS, local SOPs, and local course rules. The PUI shall accomplish the following criterion:

Brief/Debrief: IAW NATOPS and local SOPs.

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

2.16.6 CRM Training

2.16.6.1 Purpose. To conduct annual CRM training.

2.16.6.2 General

2.16.6.2.1 CRM Flight may be flown concurrent with any operational or training flight or simulator, including NATOPS-6100 or INST-6102.

2.16.6.2.2 The CRM Flight Evaluator must be designated a CRM Facilitator or CRM Instructor.

CRM-6003 3.0 365 R,SC,M E CH-53E CRM Class

Goal. Conduct annual CH-53 CRM Ground Training IAW CH-53 NATOPS, OPNAV 3710.7 and OPNAVINST 1542.7.

Performance Standards. Per CH-53 NATOPS, OPNAV 3710.7 and OPNAVINST 1542.7.

CRM-6101 1.5 365 R,SC,M (N) E 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, OPNAV 3710.7, OPNAVINST 1542.7.

Prerequisite. CRM-6003

2.16.7 CH-53 Instrument Evaluation

2.16.7.1 Purpose. To evaluate the airman's knowledge of instrument procedures and aircraft instrument systems.

2.16.7.2 General

2.16.7.2.1 Instrument Instructors shall conduct the Instrument evaluation in accordance with OPNAV 3710.7 series and other applicable directives, instructions, and orders.

2.16.7.2.2 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.

2.16.7.2.3 Instrument PUIs shall complete local instrument ground school prior to the commencement of the actual Instrument oral evaluation event.

2.16.7.3 Academic Training: Instrument Ground School IAW OPNAV 3710.7.

2.16.7.4 Prerequisites. Per OPNAV 3710 annual instrument requirements and Instrument Ground School.

INST-6005 4.0 365 R,SC,M E Instrument Ground School(IGS)

Goal. The Instrument Ground School shall be a Commander Naval Air Forces (CNAF) approved syllabus and IAW OPNAV 3710.7.

Performance Standards. Per OPNAV 3710.7

INST-6006 1.0 365 R,SC,M E Written Instrument Exam

Goal. The Instrument Written Instrument Examination shall be a Commander Naval Air Forces (CNAF) approved syllabus and IAW OPNAV 3710.7.

Performance Standards. Per OPNAV 3710.7

Prerequisite. INST-6005

INST-6102 1.5 365 R,SC,M (N) E 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 OPNAV 3710.7.

Performance Standards. Executes flight and/or ground operations safely IAW OPNAV 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

2.16.8 Helicopter Aircraft Commander (HAC)

2.16.8.1 Purpose. Demonstrate knowledge, leadership, airmanship, and judgment in all phases of flight commensurate with a Helicopter Aircraft Commander.

2.16.8.2 General

2.16.8.2.1 Squadrons shall evaluate pilots for designations at the discretion of the Commanding Officer per the criteria in the CH-53 NATOPS Flight Manual, OPNAV 3710.7, and local SOPs.

2.16.8.2.2 Upon the successful completion of the check flight the new Helicopter Aircraft Commander (HAC) will be designated in writing by the Squadron Commanding Officer.

2.16.8.2.3 Prerequisite requirements may be waived at the discretion of the Squadron Commanding Officer and details of the waiver will be annotated in the APR.

2.16.8.2.4 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.

2.16.8.3 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.

2.16.8.4 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-6120	1.5	*	D	E	A/S	1 CH-53E/WST/APT

Goal. Conduct day HAC review.

Requirements. As directed in the CH-53 NATOPS and OPNAV 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

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	*	NS	E	A/S	1 CH-53E/WST/APT

Goal. Conduct NS HAC review.

Requirements. Same as HAC-6120 with emphasis on NS planning and considerations.

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	*	R,SC	(N)	A	1 CH-53E

Goal. Conduct day into night HAC check.

Requirements. As directed in the CH-53 NATOPS and OPNAV 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

Instructor: NATOPS Instructor or Assistant NATOPS Instructor.

Performance Standards. Squadrons shall evaluate pilots for HAC designation at the discretion of the Commanding Officer per the criteria in the CH-53 NATOPS, OPNAV 3710.7, and local SOPs. This flight will cover all practicable operations and procedures contained in the T&R syllabus.

Prerequisites. BIP-5110, HAC-6120 and HAC-6121, NATOPS-6001

Ordnance. As required.

External Syllabus Support. As required.

2.16.9 Section Leader (SL)

2.16.9.1 Purpose. To prepare and evaluate the prospective Section Leader's ability to plan, brief and lead an event as a Section Leader (SL).

2.16.9.2 General

2.16.9.2.1 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.

2.16.9.2.2 All prospective Section Leader events shall be evaluated by a designated Division Leader or higher. The Section Leader evaluation flight (SL-6203) shall be administered by a Flight Leadership Standardization Evaluator (FLSE) in the aircraft.

2.16.9.2.3 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.

2.16.9.2.4 The Section Leader Under Instruction (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.

2.16.9.2.5 Prior to beginning the Section Leader syllabus:

Designated a HAC with a minimum of 25 aircraft commander hours, have flown a minimum of three flights as a HAC in a wingman position.

Nominated by the Standardization Board prior to beginning the Section Leader syllabus.

2.16.9.3 Crew Requirements. P/P/CC/AO

2.16.9.4 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.

2.16.9.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Section Leader Syllabus:

Academic: ACPM-8630 & ACPM-8660
Flight: HAC-6122
Minimum of three flights as a HAC in a wingman position.
Designation/Qualification: HAC

SL-6200 1.5 * (NS) A/S 2 AsltSpt Aircraft/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, OPNAV 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Instructor: Division Leader or higher.

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 OPNAV 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

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 (as required)

SL-6201	1.5	*	(NS)	A/S	2 AsltSpt Aircraft/WST/APT	TEN+

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-TSL, 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.

Instructor: Division Leader or higher.

Performance Standards.

Plan 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 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.

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 (as required)

SL-6202 1.5 * (NS) A/S 2 AsltSpt Aircraft/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 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, OPNAV 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Instructor: Division Leader or higher.

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 OPNAV 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.

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 (as required).

SL-6203 1.5 * R NS A 2 AsltSpt Aircraft

Goal. Conduct a Section Leader evaluation utilizing a MCT based tactical scenario in a low to medium threat environment. Day or night; 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 day or 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.

Prerequisites. 6200, 6100, 6202

Instructor: FLSE

2.16.10 Division Leader (DL)

2.16.10.1 Purpose. To prepare and evaluate the prospective Division Lead's ability to plan, brief and lead an event as a Division Lead.

2.16.10.2 General

2.16.10.2.1 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.

2.16.10.2.2 All prospective Division Leader events shall be evaluated by a designated AFL or higher. The Division Leader evaluation flight (DL-6302) shall be flown with a Flight Leadership Standardization Evaluator (FLSE) in the aircraft.

2.16.10.2.3 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.

2.16.10.2.3.1 For aircrew that require Core Skill introduction refresher training, re-designation will require successful completion of the evaluation event only, at the discretion of the MAG commanding officer.

2.16.10.2.3.2 For aircrew that require Core Sill 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.

2.16.10.2.4 The Division Leader Under Instruction (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.

2.16.10.2.5 Prospective Division Leads shall be Section Leaders who have:

Flown a minimum of three flights as a Section Leader.

600 total flight hours

200 hours in type

50 hours in model

Have been nominated by the Standardization Board prior to beginning the Division Leader syllabus

2.16.10.3 Crew Requirements. P/P/CC/AO

2.16.10.4 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.

2.16.10.5 Prerequisites. 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

DL-6300 1.5 * (NS) A/S 3+ AsltSpt Aircraft/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, OPNAV 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Instructor: Flight Leader or higher.

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 OPNAV 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.

Prerequisites. ACPM-8640, ACPM-8641, Designated SL with a minimum of three flights as a Section Leader

External Syllabus Support. WST/APT (as required)

DL-6301 1.5 * (NS) A/S 3+ AsltSpt Aircraft/WST/APT TEN+

Goal. Conduct a Division leader review utilizing a MCT based tactical scenario in a low to medium threat environment. Emphasis should be on situational awareness, flight maturity, CRM, and the tactical and operational knowledge required of a Division Lead.

Requirements. Plan, brief, lead, and debrief a tactical division flight utilizing principles of CRM and flight leadership to ensure mission success. Flight should offer sufficient opportunity to conduct lead changes, cruise principles, cruise and parade formations, and division landings. The DLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOP, local

course rules, and ORM/CRM principles.

Instructor: Flight leader or higher

Performance Standards

Plans and briefs 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 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 (as required)
Escort FW/RW aircraft optional.

DL-6302	1.5	*	R	(NS)	A	3+ AsltSpt Aircraft

Goal. Conduct a Division leader check utilizing a Mission Skill based tactical scenario in a low to medium threat environment. Emphasis should be on situational awareness, flight maturity, CRM, and the tactical and operational knowledge required of a Division Lead.

Requirements. Plan, brief, lead, and debrief a tactical division flight utilizing principles of CRM and flight leadership to ensure mission success. Flight should offer sufficient opportunity to conduct lead changes, cruise principles, cruise and parade formations, and division landings. The DLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTAC SOP, local SOP, local course rules, and ORM/CRM principles.

Instructor: FLSE.

Performance Standards

Plans and briefs 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 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. 600 hours flt hours, 200 in type, 50 hours in model, DL-6300-6301

External Syllabus Support: Escort FW/RW aircraft optional

2.16.11 Flight Leader (FL)

2.16.11.1 Purpose. To evaluate the prospective Flight Leader's ability to plan, brief and lead an event as a Flight Leader.

2.16.11.2 General

2.16.11.2.1 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.

2.16.11.2.2 The FL evaluation flight shall be evaluated by a FLSE.

2.16.11.2.3 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 Commanding Officer.

2.16.11.2.4 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.

2.16.11.2.5 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.

2.16.11.3 Crew Requirements. P/P/CC/AO.

2.16.11.4 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.

2.16.11.5 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-6400	1.5	*	R	(NS)	A	5+ Aircraft	A

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 ANTTP 3-22.3-CH53

Complies with Wing, MAG, and squadron SOPs.

Instructor: FLSE.

Performance Standards

- Plan and brief a MCT based tactical mission IAW ASTACSOP and ANTTP 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.

Prerequisites. ACAD-6010, ACPM-8620, minimum 3 flights as a Division Leader: Minimum 750 Flight hours

External Syllabus Support. CAL/MAL sites and authorized TERF areas as required. RW and/or FW escort preferred but not required.

2.16.12 Air Mission Commander (AMC)

2.16.12.1 Purpose. To prepare and evaluate the prospective Air Mission Commander's ability to plan, brief and lead an event as an Air Mission Commander.

2.16.12.2 General

2.16.12.2.1 Air Mission Commander evaluation event may be conducted from an aircraft, a C&C platform, or an appropriate ground based COC.

2.16.12.2.2 The AMC evaluation flight shall be evaluated by a FLSE.

2.16.12.2.3 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 Commanding Officer. Aircraft should be configured with all weapons and systems required for the scenario.

2.16.12.2.4 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.

2.16.12.2.5 Prospective Air Mission Commanders shall be an AFL and shall be nominated by the Standardization Board.

2.16.12.3 Crew Requirements. As required.

2.16.12.4 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.

2.16.12.5 Prerequisites. 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-6500	1.5	*	R	(NS)	A/L	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-TSL.
- Marine Corps Planning Process (MCPP) / 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 5-1, delegate mission tasks to the most advantageous asset/flight, ensure coordination and supervision of key personnel during planning, conduct tactical planning IAW ANTTP 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 ANTTP 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

Ordnance. As required.

Range Requirements. As required.

External Syllabus Support. GCE, MACCS agencies, AGS assets, multiple T/M/S RW and/or FW assets as required, and any other support required based on the tactical scenario (HST, threat emitter/simulator).

2.16.13 Functional Check Pilot (FCP)

2.16.13.1 Purpose. To prepare and evaluate the prospective Functional Check Pilot's ability to safely and proficiently conduct Functional Check Flights.

2.16.13.2 General

2.16.13.2.1 Squadron QAOs shall work closely with the PTO to monitor the squadron FCP program to ensure standardization, identify trends, provided additional FCP training and procedure compliance.

2.16.13.2.2 A designated FCP shall be the instructor for all FCPIUT training events.

2.16.13.2.3 Aircraft in a test status are preferred but are not required for the completion of an FCPIUT event.

2.16.13.3 Crew Requirements. P/P/CC.

2.16.13.4 Prerequisites. Prospective Functional Check Pilots shall be a designated HAC with a minimum of 25 aircraft commander hours to prior to the start of the syllabus, and nominated by the Standardization Board. Prior to their FCP designation, pilots must attain a minimum of 50 aircraft commander hours.

2.16.13.5 Academic Training. FCPUI will have a thorough understanding of the readings from OPNAV 3710.7, CH-53 NATOPS, 4790 Naval Aviation Maintenance Program, MIMS, and local SOP's that pertain to FCF operations. Readings and the Open book exam will be generated, administered and maintained by the Squadron QAO.

FCP-6610 1.5 * D S/A 1 WST/APT/CH-53E

Goal. Introduce AFCS checks associated with Functional Check Flight (B-card Procedures).

Requirements

Discuss:

Maintenance actions requiring a B-card
B-card procedures
QA brief/debrief

Introduce:

B-card 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.

FCP-6611 1.5 * R D A 1 CH-53E

Goal. Review AFCS checks associated with Functional Check Flight (B-card Procedures).

Requirements

Discuss:

Conditions requiring a B-card.
B-card procedures.
QA brief/debrief.

Practice:

B-card procedures.
QA brief/debrief.

Performance Standards. FCPUI will demonstrate the ability to conduct a B-card functional check flight. The evaluator should only need to offer little procedural guidance and troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing though QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management and aircrew coordination.

Prerequisites. FCP 6610 (B-card SIM Flight)

FCP-6612 1.5 * D S/A 1 WST/APT/CH-53E

Goal. Introduce Mechanical Flight Control checks associated with Functional Check Flight (C-card Procedures).

Requirements

Discuss:

Conditions requiring a C-card
C-card procedures
QA brief/debrief

Introduce:

C-card 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.

FCP-6613 1.5 * R D A 1 CH-53E

Goal. Evaluate Mechanical Flight Control checks associated with Functional Check Flight (C-card Procedures).

Requirements

Discuss:

Conditions requiring a C-card
C-card procedures
QA brief/debrief

Practice:

C-card procedures
QA brief/debrief

Performance Standards. FCPUI will demonstrate the ability to conduct a C-card functional check flight. The evaluator should only need to offer little procedural guidance and troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing though QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management and aircrew coordination.

Prerequisites: FCP 6612 (C-card SIM Flight).

FCP-6614 1.5 * D S/A 1 WST/APT/CH-53E

Goal. Introduce engine performance checks associated with Functional Check Flight (D-card Procedures).

Requirements

Discuss:

Conditions requiring a D-card.
D-card procedures.
QA brief/debrief.

Introduce:

D-card 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.

FCP-6615 1.5 * R D A 1 CH-53E

Goal. Evaluate engine performance checks associated with Functional Check Flight (D-card Procedures).

Requirements:
Discuss:
Conditions requiring a D-card
D-card procedures
QA brief/debrief

Practice:
D-card procedures
QA brief/debrief

Performance Standards. FCPUI will demonstrate the ability to conduct a D-card functional check flight. The evaluator should only need to offer little procedural guidance and troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing though QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management and aircrew coordination.

Prerequisites. FCP 6614 (D-card SIM Flight).

FCP-6616 1.5 * R D S/A 1 WST/APT/CH-53E

Goal. Introduce A-card procedures not associated with another FCF profile Flight (A-card unique items).

Requirements
Discuss:
Conditions requiring an A-card
A-card procedures
IMDS testing procedures
QA brief/debrief

Introduce:
A-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(B-card SIM), FCP-6612(C-card SIM),FCP-6614(D-card SIM).

FCP-6617 1.5 * R D A 1 CH-53E

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, OPNAV 3710.7, 4790 Naval Aviation Maintenance Program, MIMS, and local SOPs.
Instructor: As determined by the squadron standardization board but must be a designated FCP at a minimum.

Discuss: Any previously discussed item in the FCP syllabus.

Review:
A-card procedures.

Perform a full A-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 nor provide troubleshooting input. The FCPUI shall be evaluated on all stages of the evolution from QA briefing though QA debriefing and MAF initiation. FCPUI will be evaluated on overall systems knowledge, procedural correctness, time management, cockpit management, and aircrew coordination.

Prerequisites. FCP-6610-FCP-6616, completion of the squadron academic syllabus, 50 HAC hours and as determined by squadron CO, AMO, QAO, and STAN Board.

2.17 AVIATION CAREER PROGRESSION MODEL (ACPM) 8000 PHASE

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

Marine Air Command and Control System (MACCS)
Aviation Ground Support
Joint Air Operations
ACE Battle Staff
MAGTF
Seabased Operations
Combatant Commander Organizations

2.17.2 General

2.17.2.1 The ACPM is intended to be an integrated series of academic events contained within each phase of training.

2.17.2.2 All ACPM classes are available on the MAWTS-1 NIPR website at

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

2.17.2.3 On the far left margin of the MAWTS-1 NIPR website, under documents is a tab for ACPM. Clicking on that tab will bring up viewing instructions, purpose, and the 3 ACPM categories (core skill, mission skill, flight leadership). Under the 3 category tabs, all the ACPM classes are listed in power point and media site format. Media site is the primary viewing form, backed up with power point slides, if necessary. For downloading classes, all the folders associated with each class (player, APP_themes, content, player options, etc) must be copied over to the selected computer.

2.17.2.4 These academic events can be given lecture style to an audience or done individually. If given as a lecture, those in attendance will sign an attendance roster and be given credit for the event by the PTO, or designated representative. 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.

2.17.2.5 If done on a self-paced individual level, that individual will report to the PTO or designated representative, upon completion. The PTO or designated representative will then manually update MSHARP.

2.17.2.6 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 NAVM C3500.14 Aviation T&R Program Manual, paragraph 212.

2.17.2.7 ACPM academic events are like any other academic event in that they serve as pre-requisites to selected flight events or stages.

2.17.2.8 Several ACPM academic events are integrated as prerequisites for flight leadership syllabi.

2.17.2.9 Squadron Commanding Officers shall ensure the requisite ACPM training requirements have been met prior to designating flight leaders.

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

TRAINING PHASE	ACPM ACADEMIC EVENT	PRE-REQUISITE TO
CORE SKILL	(U) ACPM-8200 MACCS AGENCIES, FUNCTIONS, AND CONTROL OF AIRCRAFT AND MISSILES	LLL STAGE
	(U) ACPM-8201 MWCS BRIEF	LLL STAGE
	(U) ACPM-8202 ACA & AIRSPACE	LLL STAGE
	(U) ACPM-8210 AVIATION GROUND SUPPORT	LLL STAGE
	(U) ACPM-8230 ACE BATTLESTAFF	LLL STAGE
	(U) ACPM-8231 BATTLE COMMAND DISPLAY	LLL STAGE
	(U) ACPM-8240 SIX FUNCTIONS OF MARINE AVIATION	LLL STAGE
	(U) ACPM-8241 ASR/JTAR INTRODUCTION AND PRACTICAL APPLICATION	LLL STAGE
	(U) ACPM-8242 SITE COMMAND PRIMER	LLL STAGE
	(U) ACPM-8250 THEATER AIR GROUND SYSTEM (TAGS)	LLL STAGE
MISSION SKILL	(U) ACPM-8300 AIR DEFENSE	EXP-3240
	(U) ACPM-8310 FORWARD ARMING REFUELING POINT (FARP) OPERATIONS	EXP-3240
	(U) ACPM-8311 MARINE CORPS TACTICAL FUEL SYSTEMS	EXP-3240
	(U) ACPM-8320 JOINT STRUCTURE AND JOINT AIR OPERATIONS	AT-3340
	(U) ACPM-8321 JOINT AIR TASKING CYCLE PHASE 1: STRATEGY DEVELOPMENT	AT-3340
	(U) ACPM-8322 JOINT AIR TASKING CYCLE PHASE 2: TARGET DEVELOPMENT	AT-3340
	(U) ACPM-8323 JOINT AIR TASKING CYCLE PHASE 3: WEAPONEERING AND ALLOCATION	AT-3340
	(U) ACPM-8324 JOINT AIR TASKING CYCLE PHASE 4: JOINT ATO PRODUCTION	AT-3340
	(U) ACPM-8325 JOINT AIR TASKING CYCLE PHASE 5: FORCE EXECUTION	AT-3340
	(U) ACPM-8326 JOINT AIR TASKING CYCLE PHASE 6: COMBAT ASSESSMENT	AT-3340
	(U) ACPM-8340 INTEGRATING FIRES AND AIRSPACE WITHIN THE MAGTF	AT-3340
	(U) ACPM-8350 PHASING CONTROL ASHORE	SEA-3140
	(U) ACPM-8351 TACRON ORGANIZATIONS AND FUNCTIONS	SEA-3140
FLIGHT LEADERSHIP	(U) ACPM-8630 TACTICAL AIR COMMAND CENTER (TACC)	SECTION LEADER STAGE
	(U) ACPM-8660 JOINT OPS INTRO	
	(U) ACPM-8640 JOINT DATA NETWORK	DIVISION LEADER STAGE
	(U) ACPM-8641 MAGTF THEATER AND NATIONAL ISR EMPLOYMENT	
	(U) ACPM-8620 ESG/CSG INTEGRATION	FLIGHT LEADER STAGE

2.17.2.11 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.

2.17.2.12 ACPM events do not have refly intervals.

2.18 T&R SYLLABUS MATRIX. The below matrix summarizes T&R syllabus event Information.

2.18 T&R SYLLABUS MATRIX (2000-8000)

CH-53E PILOT T&R MATRIX (2000-8000 PHASE)

SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	BASIC	REF	SC	MAIN	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
2000 PHASE - CORE SKILL BASIC																							
ACADEMIC STAGE (ACAD)																							
	ACAD	2000	CH-53 GPS (FAM)	X					1.0									*					2000
	ACAD	2001	ARC-210	X	X		X		1.0									365					2001
	ACAD	2002	AN/AYK-28	X					0.8									*					2002
	ACAD	2003	CH-53 INTERNAL CARGO	X					1.0									*					2003
	ACAD	2004	CH-53 AAR/ALE-47 (*)	X	X		X		1.5									365					2004
	ACAD	2005	CH-53 TACFORM	X					1.0									*					2005
	ACAD	2006	CH-53 PFPS TECHNIQUES	X					2.0									*					2006
	ACAD	2007	DESERT OPS (*)	X	X		X		1.0									365					2007
	ACAD	2008	MOUNTAIN OPS(*) (CAL)	X	X		X		1.0									365					2008
	ACAD	2009	COMBAT AIRCREW COOR	X					1.0									*					2009
	ACAD	2010	HUD	X					1.0									*					2010
	ACAD	2011	ASD TERRAIN FLIGHT	X					1.0									*					2011
	ACAD	2012	CH-53 APR-39 (*)	X	X		X		0.5									365					2012
	ACAD	2013	SURFACE TO AIR THREAT	X					0.5									*					2013
	ACAD	2014	HEAVY LIFT OPS	X	X		X		1.0									365					2014
	ACAD	2015	AS TO ARTILLERY	X					1.0									*					2015
	ACAD	2016	CH-53 DM/GTR I (GTR)	X					1.0									*					2016
	ACAD	2017	IR SAM THREAT	X	X		X		1.8									365					2017
	ACAD	2019	AAQ-24(*)	X	X		X		1.0									365					2019
	ACAD	2020	AAA THREAT	X					0.8									*					2020
ACAD	ACAD	2021	EVASIVE MANEUVERS	X					1.0									*					2021
	ACAD	2022	HAAR(*) (AR)	X	X	X	X		1.0									365					2022
	ACAD	2023	CH-53 WEAPONS SYSTEMS	X					1.0									*					2023
	ACAD	2024	WEAPONS EMPLOYMENT	X					1.0									*					2024
	ACAD	2025	INTRO TO LASER SYSTEMS	X					1.0									*					2025
	ACAD	2026	MAGTF FSCMS	X	X		X		1.0									365					2026
	ACAD	2027	OBJECTIVE AREA	X	X		X		1.0									365					2027
	ACAD	2028	ROE	X					1.0									*					2028
	ACAD	2029	EXECUTION CHECKLIST	X					0.5									*					2029
	ACAD	2030	MISSION ANALYSIS(*)	X	X		X		1.5									365					2030
	ACAD	2031	NVG PREFLIGHT & ADJ	X					1.0									*					2031
	ACAD	2032	NVG SYSTEMS	X					1.0									*					2032
	ACAD	2033	THE NIGHT ENVIRONMENT	X					1.0									*					2033
	ACAD	2034	MISPERCEPTIONS & ILL	X					1.0									*					2034
	ACAD	2035	NIGHT ROUTE PLANNING	X					1.0									*					2035
	ACAD	2036	NIGHT OPS & PLANNING A	X					1.0									*					2036
	ACAD	2037	HUMAN FACTORS	X					1.0									*					2037
	ACAD	2038	FLIR TRAINING COURSE	X					1.0									*					2038
	ACAD	2039	CH-53 HNVS FLIR (LLL)	X					1.0									*					2039
	ACAD	2040	ASULT SUPP ESCORT TAC	X					1.0									*					2040
	ACAD	2041	BATTLEFIELD ILLUM	X					0.5									*					2041
TOTAL ACAD STAGE								41	41.4	0	0.0	0	0.0										

CH-53E PILOT T&R MATRIX (2000-8000 PHASE)

SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	BASIC	REF	SC	MAIN	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
FAMILIARIZATION / INSTRUMENT STAGE (FAM/INST)																							
FAM	ACAD	2001	ARC-210	X	X		X											365					2001
	ACAD	2002	AN/AYK-28	X														*					2002
	ACAD	2003	CH-53 INTERNAL CARGO	X														*					2003
	ACAD	2004	CH-53 AAR/ALE-47 (*)	X	X		X											365					2004
	ACAD	2006	CH-53 PFPS TECHNIQUES	X														*					2006
	SFAM	2100	SIM FAM, INSTR, EP	X	X		X				1.5			(N)	S/A	1		90	1902				2100
	FAM	2101	DAY HUD FAM/CAL	X	X	X					1.5				S/A	1		*	2100				2101
	FAM	2105	FAM, INSTR, EP	X	X		X						1.5	(N)	A	1		365	2100				2105
TOTAL FAM/INST STAGE								0	0.0	2	3.0	1	1.5										
FORMATION STAGE (FORM)																							
FORM	ACAD	2005	CH-53 TACFORM	X														*					
	FORM	2110	DAY FORM	X	X		X						1.5		A	2		365	2005,2105				2110
TOTAL FORM STAGE								0	0.0	0	0.0	1	1.5										
CONFINED AREA LANDING STAGE (CAL)																							
CAL	ACAD	2007	DESERT OPERATIONS (*)	X	X		X											365					2007
	ACAD	2008	MOUNTAIN OPERATIONS(*)	X	X		X											365					2008
	ACAD	2009	COMBAT AIRCREW COOR	X														*					2009
	ACAD	2010	HUD	X														*					2010
	CAL	2210	CALS	X	X								1.5		A	1		365	2101,2105				2210
	CAL	2211	SECTION CALS	X	X	X	X						1.5		A	2		365	2110,2210	2210,2110,2105			2211
TOTAL CAL STAGE								0	0.0	0	0.0	2	3.0										
TERRAIN FLIGHT STAGE (TERF)																							
TERF	ACAD	2011	ASD TERRAIN FLIGHT	X														*					2011
	ACAD	2012	CH-53 APR-39 (*)	X	X		X											365					2012
	ACAD	2013	SURFACE TO AIR THREAT	X														*					2013
	TERF	2310	TERF	X									1.5		A	1		*	2105,2011				2310
	TERF	2311	SECTION TERF	X	X	X	X						1.5		A	2		365	2110,2310	2110			2311
TOTAL TERF STAGE								0	0.0	0	0.0	2	3.0										
EXTERNAL STAGE (EXT)																							
EXT	ACAD	2014	HEAVY LIFT OPS (EXT)	X	X		X											365					2014
	ACAD	2015	AS TO ARTILLERY	X														*					2015
	SEXT	2400	HEAVY LIFT EXT SIM	X	X						1.5				S	1		*	1902,2101				2400
	EXT	2410	SINGLE POINT EXTERNALS	X	X	X							1.5		A	1		*	2014,2210	2210			2410
	EXT	2411	DUAL POINT EXTERNALS	X	X	X	X						1.5		A	1		365	2014,2210	2210,2410			2411
	EXT	2420	HLL SINGLE POINT EXT	X	X	X							1.5	NS	A	1		*	2220,2410	2410			2420
	EXT	2421	HLL DUAL POINT EXT	X	X	X	X						1.5	NS	A	1		180	2220,2411	2410,2411,2420			2421
	EXT	2430	LLL EXTERNAL	X	X	X	X						1.5	NS	A	1		180	2230,2420,2421,NSQ-HLL	2410,2411,2420,2421 ~dual point			2430
	EXT	2441	HEAVY LIFT EXTERNALS	X	X		X						1.5	(NS)	A	1		365	2400,2410,2421~NS,2430~LLL	2410,2210			2441
TOTAL EXT STAGE								0	0.0	1	1.5	6	9.0										

CH-53E PILOT T&R MATRIX (2000-8000 PHASE)

SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	BASIC	REF	SC	MAIN	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	TEN +	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
GROUND THREAT REACTION STAGE (GTR)																							
GTR	ACAD	2016	CH-53 DM/GTR I (GTR)	X														*					2016
	ACAD	2017	IR SAM THREAT	X	X		X											365					2017
	ACAD	2019	AAQ-24(*)	X	X		X											365					2019
	ACAD	2020	AAA THREAT	X														*					2020
	ACAD	2021	EVASIVE MANEUVERS	X														*					2021
	SGTR	2500	GTR & ASE FAM SIM	X							1.5				S	2		*	2016,2017,2019,2020,2021,2311				2500
	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	2		365	2311,2500,2321~NS,2331~LLL,2810~ORD	2110,2311			2540
TOTAL GTR STAGE								0	0.0	1	1.5	1	1.5										
HELICOPTER AIR TO AIR REFUELING STAGE (HAAR)																							
HAAR	ACAD	2022	HAAR(*) (AR)	X	X	X	X											365					2022
	SHAAR	2600	DAY HAAR SIM	X		X					1.5				S	1		*	2100,2022				2600
	SHAAR	2601	NS HAAR SIM	X		X					1.5			NS	S	1		*	2600				2601
	HAAR	2610	DAY HAAR LEFT HOSE	X		X							1.5		A	1		*	2110,2600				2610
	HAAR	2611	DAY HAAR LEFT & RIGHT	X	X	X	X						1.5		A	1		180	2610				2611
	HAAR	2640	NS HAAR	X	X	X	X						1.5	NS	A	1		180	2101,2120,2601,2611	2611			2640
TOTAL HAAR STAGE								0	0.0	2	3.0	3	4.5										
FIELD CARRIER LANDING PRACTICE STAGE (FCLP)																							
FCLP	SFCLP	2700	SIM CQ	X							1.5			(N)	S	1		*					2700
	FCLP	2710	DAY FCLP	X	X	X	X						1.5		A	1		365	2210,2700				2710
	FCLP	2742	NS FCLP	X	X	X	X						1.5	NS	A	1		365	2220,2230,2710	2710			2742
TOTAL CQ STAGE								0	0.0	1	1.5	2	3.0										
AERIAL GUNNERY STAGE (AG)																							
AG	ACAD	2023	CH-53 WEAPONS SYSTEMS	X														*					2023
	ACAD	2024	WEAPONS EMPLOYMENT	X														*					2024
	ACAD	2025	INTRO TO LASER SYSTEMS	X														*					2025
	ACAD	2026	MAGTF FSCMS	X	X		X											365					2026
	AG	2810	AERIAL GUNNERY	X									1.5		A	1		*	2023,2024,2025,2026,2105				2810
	AG	2840	NS GUNNERY	X	X		X						1.5	NS	A	1		365	2101,2810,NSQ-HLL				2840
TOTAL AG STAGE								0	0.0	0	0.0	2	3.0										
TACTICS STAGE (TAC)																							
TAC	ACAD	2027	OBJ AREA PLANNING	X	X		X											365					2027
	ACAD	2028	ROE	X														*					2028
	ACAD	2029	EXECUTION CHECKLIST	X														*					2029
	ACAD	2030	MISSION ANALYSIS(*)	X	X		X											365					2030
	TAC	2910	LOW THREAT LEVEL	X									2.0		A	2		*	2027,2028,2029,2030,2211,2311,2810~50 CAL	2110,2210,2211			2910
	TAC	2911	MED THREAT LEVEL	X	X		X						2.0		A	2		365	2910	2110,2210,2211			2911
TOTAL TAC STAGE								0	0.0	0	0.0	2	4.0										
NIGHT SYSTEMS HIGH LIGHT LEVEL STAGE (NS HLL)																							

NS HLL	ACAD	2031	ASSAULT NVG PREFLIGHT	X														*						2031
	ACAD	2032	NVG SYSTEMS	X														*						2032
	ACAD	2033	THE NIGHT ENVIRONMENT	X														*	2032					2033
	ACAD	2034	MISPERCEPTIONS & ILL	X														*	2033					2034
	ACAD	2035	NIGHT ROUTE PLANNING	X														*	2031					2035
	ACAD	2036	NIGHT OPERATIONS	X														*	2035					2036
	SHLL	2102	OPS OF AIRCRAFT NS	X	X						1.5			NS	S/A	1		*	2031,2100					
	HLL	2120	HLL FORM	X	X								1.5	NS	A	2		180	2036,2102,2110					2120
	HLL	2220	HLL CALS	X									1.5	NS	A	1		180	2102,2210					2220
	HLL	2221	HLL SECTION CALS	X	X	X	X						1.5	NS	A	2		180	2120,2211,2220	2220,2120,2211,2210				2221
	HLL	2320	HLL TERF	X									1.5	NS	A	1		180	2102,2310	2311,2310				2320
	HLL	2321	HLL SECTION TERF	X	X	X	X						1.5	NS	A	2		180	2120,2311,2320	2311,2310,2320				2321
	HLL	2920	HLL CHK/LOW THREAT TAC	X	X		X						2.0	NS	A	2		365	2221,2321,2910, 2810~50 CAL	2910,2221,2220,2211,2210,2110				2920
TOTAL NS HLL STAGE								0	0.0	1	1.5	6	9.5											
NIGHT SYSTEMS LOW LIGHT LEVEL STAGE (NS LLL)																								
NS LLL	ACAD	2037	HUMAN FACTORS	X														*						2037
	ACAD	2038	FLIR TRAINING COURSE	X														*						2038
	ACAD	2039	CH-53 HNVS FLIR (LLL)	X														*						2039
	ACAD	2040	AS ESCORT TACTICS	X														*						2040
	ACAD	2041	BATTLEFIELD ILLUM	X														*						2041
	LLL	2230	LLL CALS	X									1.5	NS	A	1		180	NSQ-HLL	2210,2220				2230
	LLL	2231	LLL SECTION CALS	X	X	X	X						1.5	NS	A	2		180	2230	2210,2211,2220,2221,2230				2231
	LLL	2330	LLL TERF	X									1.5	NS	A	1		180	NSQ-HLL	2310,2320				2330
	LLL	2331	LLL SECTION TERF	X	X	X	X						1.5	NS	A	2		180	2330	2310,2311,2320,2321,2330				2331
	LLL	2930	LLL CHK/MED THREAT TAC	X	X	X	X						2.0	NS	A	2		365	2231,2331,2911, 2810~50 CAL	2110,2211,2120,2210,2220,2221,2230,2231,2910,2911,2920				2930
TOTAL NS LLL STAGE								0	0.0	0	0.0	5	8.0											
CORE SKILL PHASE TOTAL								41	41.4	8	12.0	33	51.5											
3000 PHASE - MISSION SKILLS																								
ACADEMIC STAGE (ACAD)																								
ACAD	ACAD	3000	RAPID RESPONSE PLANNING	X					1.0						G			*						3000
	ACAD	3001	REC THREAT	X					0.7						G			*						3001
	ACAD	3002	NEO EXECUTION	X					0.8						G			*						3002
	ACAD	3003	INTELL PREP	X					0.8						G			*						3003
	ACAD	3004	PERSONNEL RECOVERY	X					1.0						G			*						3004
	ACAD	3005	CH-53 SPECIFIC TRAP	X					0.8						G			*						3005
	ACAD	3006	CASEVAC	X					0.5						G			*						3006
	ACAD	3007	CIRCADIAN RHYTHM	X					1.0						G			*						3007
	ACAD	3008	INTRO TO NVG TAC	X					1.0						G			*						3008
TOTAL ACAD STAGE								9	7.6	0	0.0	0	0.0											

EXPEDITIONARY SHORE BASED OPERATIONS STAGE (EXP)																							
EXP	ACAD	3000	RAPID RESPONSE	X											G			*					3000
	ACAD	3001	REC THREAT	X											G			*					3001
	LLL	2231	LLL SECTION CALS	X	X	X	X							NS	A	2		180	2230	2210,2211,2220,2221,2230			2231
	LLL	2331	LLL SECTION TERF	X	X	X	X							NS	A	2		180	2330	2311,2320,2321,2330			2331
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL,2810~ORD	2110,2311			2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,NSQ-HLL				2840
	EXP	3140	EXP SHORE BASED TAC	X	X		X						2.0	(N)	A/S	1+	X	365	3000,3001,2930,8300,8310,8311,2540				3140
TOTAL EXP STAGE								0	0.0	0	0.0	1	2.0										
ASSAULT TRANSPORT STAGE (AT)																							
AT	ACAD	3002	NEO EXECUTION	X											G			*					3002
	ACAD	3003	INTELL PREP	X											G			*					3003
	LLL	2231	LLL SECTION CALS	X	X	X	X							NS	A	2		180	2230	2210,2211,2220,2221,2230			2231
	LLL	2331	LLL SECTION TERF	X	X	X	X							NS	A	2		180	2330	2311,2320,2321,2330			2331
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL,2810~ORD	2110,2311			2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,NSQ-HLL				2840
	AT	3240	ASSAULT TRANSPORT TAC	X	X		X						2.0	(N)	A/S	1+	X	365	2930,3002,3003,8320,2540,2840				3240
TOTAL AT STAGE								0	0.0	0	0.0	1	2.0										
AERIAL DELIVERY STAGE (AD)																							
AD	LLL	2231	LLL SECTION CALS	X	X	X	X							NS	A	2		180	2230	2210,2211,2220,2221,2230			2231
	LLL	2331	LLL SECTION TERF	X	X	X	X							NS	A	2		180	2330	2311,2320,2321,2330			2331
	EXT	2430	LLL EXTERNAL	X	X	X	X							NS	A	1		180	2230,2420,2421,NSQ-HLL	2410,2411,2420			2430
	EXT	2441	HEAVY LIFT EXTERNALS	X	X		X							(NS)	A	1		365	2400,2410,2421~NS, 2430~LLL	2410,2210			2441
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL,2810~ORD	2110,2311			2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,NSQ-HLL				2840
	AD	3340	AERIAL DELIVERY TAC	X	X		X						2.0	(N)	A/S	1+	X	365	2930,8321,8322,8323,8324,8325,8326,2430,2540,2840				3340
TOTAL AD STAGE								0	0.0	0	0.0	1	2.0										

TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL STAGE (TRAP)																								
TRAP	ACAD	3004	PERSONNEL RECOVERY	X											G			*						3004
	ACAD	3005	CH-53 SPECIFIC TRAP	X											G			*						3005
	LLL	2231	LLL SECTION CALS	X	X	X	X							NS	A	2		180	2230	2210,2211,2220,2221,2230				2231
	LLL	2331	LLL SECTION TERF	X	X	X	X							NS	A	2		180	2330	2311,2320,2321,2330				2331
	EXT	2430	LLL EXTERNAL	X	X	X	X							NS	A	1		180	2230,2420,2421,NSQ-HLL	2410,2411,2420				2430
	EXT	2441	HEAVY LIFT EXTERNALS	X	X		X							(NS)	A	1		365	2400,2410,2421~NS, 2430~LLL	2410,2210				2441
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL, 2810~ORD	2110,2311				2540
	HAAR	2640	NS HAAR	X	X	X	X							NS	A	1		180	2101,2120,2601,2611					2640
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,NSQ-HLL					2840
	TRAP	3440	TRAP TACTICS	X	X		X						2.0	(N)	A/S	1+	X	365	2930,3004,3005,8340,2430,2441,2540,2640,2840					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	X											G			*						3007
	ACAD	3008	INTRO TO NVG TAC	X											G			*						3008
	LLL	2231	LLL SECTION CALS	X	X	X	X							NS	A	2		180	2230	2210,2211,2220,2221,2230				2231
	LLL	2331	LLL SECTION TERF	X	X	X	X							NS	A	2		180	2330	2311,2320,2321,2330				2331
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL, 2810~ORD	2110,2311				2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,NSQ-HLL					2840
	AE	3540	AERIAL EVACUATION TAC	X	X		X						2.0	(N)	A/S	1+	X	365	2930,3006,3007,3008,8350,8351,2540,2840					3540
TOTAL AE STAGE								0	0.0	0	0.0	1	2.0											
TOTAL MISSION PHASE								9	7.6	0	0.0	5	10.0											
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 AS	X					1.0						G			*						4004
	ACAD	4005	ATTACK HELO THREAT	X					0.5						G			*						4005
	ACAD	4006	RGR	X					1.0						G			*						4006
	ACAD	4007	MOUT	X					1.5						G			*						4007
	ACAD	4008	JCAS	X					1.0						G			*						4008
	ACAD	4009	GCE RAID PLANNING	X					0.8						G			*						4009
	ACAD	4010	MAGTF TARGETING	X					1.0						G			*						4010
	ACAD	4011	TBFDS/MK-105	X					1.0						G			*						4011
TOTAL ACAD STAGE								12	11.5	0	0.0	0	0.0											

HELICOPTER INSERTION & EXTRACTION TECHNIQUES STAGE (HIE)																								
HIE	HIE	4110	HELOCAST	X	X		X						1.5		A	1		365	2310	2210				4110
	HIE	4140	FASTROPE/SPIE/RAPEL	X		X							1.5	(NS)	A	1		*	2210,2920~NS,2930~LLL	2210				4140
	HIE	4141	PARA OPS	X									1.5	(NS)	A	1		*	2210,2920~NS,2930~LLL	2210				4141
TOTAL HIE STAGE								0	0.0	0	0.0	3	4.5											
TERRAIN FLIGHT EXTERNALS STAGE (TERF EXT)																								
EXT	SEXT	4412	DAY TERF EXTERNALS	X	X	X					1.5				S/A	1		365	2210,2310,2410,2411,2500					4412
	SEXT	4440	NS TERF EXTERNALS	X	X	X	X				1.5			NS	S/A	1		365	2320,2420,2421,4412,2330,2430~LLL	4412				4440
								0	0.0	2	3.0	0	0.0											
GROUND THREAT REACTION STAGE (GTR)																								
GTR	ACAD	4000	RF SAM	X											G			*						4000
	GTR	4540	RADAR GTR	X	X		X						1.5	(NS)	A	2		365	2311,2500,4000	2110,2311				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 AS	X											G			*						4004
	ACAD	4005	ATTACK HELO THREAT	X											G			*						4005
	DM	4510	RW DM	X	X		X						1.5		A	2		365	2311,4001-4005	2110,2311				4510
	DM	4511	FW DM	X	X		X						1.5		A	2		365	2311,4001-4005	2110,2311				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	2	X	*	2105~DAY,2220~HLL,2230					4600
TOTAL CBRN STAGE								0	0.0	1	1.5	0	0.0											
CARRIER QUALIFICATION STAGE (CQ)																								
CQ	CQ	4711	DAY CQ	X	X	X							1.5		A	1		365	2710					4711
	CQ	4743	NS CQ	X	X	X	X						1.5	NS	A	1		365	2742,4711,2920~HLL	4711				4743
TOTAL CQ STAGE								0	0.0	0	0.0	2	3.0											
TACTICS STAGE (TAC)																								
TAC	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL,2810~ORD	2110,2311				2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,NSQ-HLL					2840
	ACAD	4006	RGR	X											G			*						4006
	ACAD	4007	MOUT	X											G			*						4007
	TAC	4940	DIV TACTICS	X	X		X						2.0	(NS)	A	3+		365	2911,2920~HLL,2930~LLL	2210,2211,2911,NS~2920,LLL~2230,LLL~2231,2930~LLL				4940
	TAC	4941	URBAN TACTICS	X	X		X						2.0	NS	A	2		365	2911,4007,2920~HLL,2930~LLL,2840,2540	2110,2210,2211,2220,2221,2910,2911				4941
	TAC	4942	LONG RANGE TACTICS	X	X		X						4.0	(NS)	A	2		365	2640,2911,4006,2920~HLL,2930~LLL,2840,2540,	2110,2210,2211,2911				4942
TOTAL TAC STAGE								0	0.0	0	0.0	3	8.0											

RAID STAGE (RAID)																							
RIE	GTR	2540	NON RADAR GTR	X	X		X						2.0	(NS)	A	2		365	2311,2500,2321~NS,2331~LLL, 2810~ORD	2110,2311			2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,2321-HLL				2840
	ACAD	4008	JCAS	X											G			*					4008
	ACAD	4009	GCE RAID PLANNING	X											G			*					4009
	ACAD	4010	MAGTF TARGETING	X											G			*					4010
	RAID	4980	RIE TACTICS	X	X		X						2.0	(N)	A/S	1+	X	365	2930,4008,4009,4010,2840,25 40,				4980
TOTAL RIE STAGE								0	0.0	0	0.0	1	2.0										
AVIATION DELIVERED GROUND REFUELING STAGE (ADGR)																							
ADGR	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL, 2810~ORD	2110,2311			2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,2321-HLL				2840
	ACAD	4011	TBFDS/MK-105	X											G			*					4011
	ADGR	4981	ADGR TACTICS	X	X		X						2.0	(N)	A	1+		365	4011,2930~LLL,2540,2840				4981
TOTAL ADGR STAGE								0	0.0	0	0.0	1	2.0										
SEA BASED OPERATIONS STAGE STAGE (SEA)																							
SEA	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2		365	2311,2500,2321~NS,2331~LLL, 2810~ORD	2110,2311			2540
	AG	2840	NS GUNNERY	X	X		X							NS	A	1		365	2101,2810,2321-HLL				2840
	SEA	4982	SEA BASED TACTICS	X	X		X						2.0	(N)	A/S	1+	X	365	2930-LLL,4711~DAY,4743~HLL, 2540,2840				4982
TOTAL SEA STAGE								0	0.0	0	0.0	1	2.0										
TOTAL CORE PLUS PHASE								12	11.5	3	4.5	14	26.0										
INSTRUCTOR TRAINING (5000 PHASE)																							
ACADEMICS STAGE (ACAD)																							
ACAD	ACAD	5000	INSTRUCTIONAL TECHNIQUES	X					1.0									*					5000
TOTAL ACAD STAGE								1	1.0	0	0.0	0	0.0										
BASIC INSTRUCTOR STAGE (BIP)																							
BIP	ACAD	5000	INST TECHNIQUES	X					1.0									*					5000
	BIP	5100	BIP IUT FAM/CAL/INST	X							1.5			D	S/A	1		*	NSQ-LLL, Core & Mission Skill complete				5100
	BIP	5101	BIP IUT EXT/CQ	X							1.5			D	S/A	1		*	5100				5101
	BIP	5110	BIP CHECK	X									1.5	D	A	1		*	5101				5110
TOTAL BIP STAGE								1	1.0	2	3.0	1	1.5										
TERF INSTRUCTOR STAGE (TERFI)																							
TERF	TERF	5200	TERFI UT 1 A/C TERF	X									1.5	D	A	1		*	COURSE CATALOG				5200
	TERF	5201	TERFI UT EXT	X									1.5	D	A	1		*	COURSE CATALOG				5201
	TERF	5202	TERFI CHECK	X	X								1.5	D	A	2		*	COURSE CATALOG				5202
TOTAL TERFI STAGE								0	0.0	0	0.0	3	4.5										

AERIAL REFUELING INSTRUCTOR STAGE (ARI)																							
ARI	ARI	5300	ARI UT DAY	X									1.5	D	A	1		*	COURSE CATALOG				5300
	ARI	5301	ARI NIGHT CHECK	X	X								1.5	NS	A	1		*	COURSE CATALOG				5301
TOTAL ARI STAGE								0	0.0	0	0.0	2	3.0										
DEFENSIVE MEASURES INSTRUCTOR STAGE (DMI)																							
DMI	DMI	5700	2 V GROUND THREAT	X									1.5	D	A	2		*	COURSE CATALOG				5700
	DMI	5701	2 V FW/RW	X									1.5	D	A	2		*	COURSE CATALOG				5701
	DMI	5702	2 V FW/RW	X	X								1.5	D	A	2		*	COURSE CATALOG				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			*	COURSE CATALOG				5800
	NSI	5801	NSI UT LOW WORK	X									1.5	NS	A	1		*	COURSE CATALOG				5801
	NSI	5802	NSI UT CALS/EXT	X									1.5	NS	A	1		*	COURSE CATALOG				5802
	NSI	5803	NSI UT TERF	X									1.5	NS	A	2		*	COURSE CATALOG				5803
	NSI	5804	NSI UT TACEX	X									1.5	NS	A	2		*	COURSE CATALOG				5804
	NSI	5805	NSI CHECK	X	X								4.5	NS	A	2		*	COURSE CATALOG				5805
TOTAL NSI STAGE								0	0.0	1	1.5	5	10.5										
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)																							
ACADEMICS STAGE (ACAD)																							
ACAD	ACAD	6010	TAC FLIGHT BRIEFING	X					1.5						G								6010
	ACAD	6011	AMC	X					0.8						G								6011
TOTAL ACADEMIC STAGE								2	2.3	0	0.0	0	0.0										
NATOPS STAGE																							
NATOPS	NATOPS	6000	NATOPS OPEN BOOK EXAM	X	X	X	X		3.0						G			365				X	6000
	NATOPS	6001	NATOPS CLOSED EXAM	X	X	X	X		1.0						G			365	6000			X	6001
	NATOPS	6002	NATOPS ORAL EXAM	X	X	X	X		2.0						G			365	6001			X	6002
	NATOPS	6004	MONTHLY EP EXAM	X	X	X	X		1.0						G			30				X	6004
	NATOPS	6100	NATOPS EVALUATION	X	X	X	X						1.5	(N)	S/A	1		365	6002	6000,6001,6002,6004	E	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	X		3.0						G			365				X	6003
	CRM	6101	PRACTICE CRM PRICIPLES	X	X	X	X						1.5	(N)	S/A	1		365	6003		E	X	6101
TOTAL CRM STAGE								1	3.0	0	0.0	1	1.5										
INSTRUMENT STAGE (INST)																							
INST	INST	6005	INST GROUND SCHOOL	X	X	X	X		4.0						G			365				X	6005
	INST	6006	INSTRUMENT EXAM	X	X	X	X		1.0						G			365	6005			X	6006
	INST	6102	INSTRUMENT EVALUATION	X	X	X	X						1.5		S/A	1		365	6006		E	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		*	NSQ-LLL, CORE AND MISSION SKILL COMPLETE				6120
	HAC	6121	NS HAC REVIEW	X									1.5	NS	A/S	1		*	NSQ-LLL				6121
	HAC	6122	DAY INTO NIGHT HAC EVAL	X	X	X							2.0	(N)	A			*	5110,6120,6121,6001				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	*	8630,8660,HAC				6200
	SL	6201	MCT BASED TACTICAL SCENARIO	X									1.5	(NS)	A/S	2	X	*	8630,8660,HAC				6201
	SL	6202	DAY OR NIGHT CORE SKILL SL REVIEW	X									1.5	(NS)	A/S	2	X	*	8630,8660,HAC				6202
	SL	6203	NIGHT SL EVAL W FLSE	X	X								1.5	NS	A	2		*	6200,6201,6202				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	*	8640,8641,SL				6300
	DL	6301	MCT BASED TACTICAL SCENARIO	X									1.5	(NS)	A/S	3	X	*	8640,8641,SL				6301
	DL	6302	DL EVALUATION W FLSE	X	X								1.5	(NS)	A	3		*	6300,6301				6302
TOTAL DL STAGE								0	0.0	0	0.0	3	4.5										
FLIGHT LEADER STAGE (FL)																								
FL	FL	6400	FL EVAL W FLSE	X	X								1.5	(NS)	A	5+		*	6010,8620,DL,				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	X								1.5	(NS)	A	5+		*	6011, FLT LD				6500
								0	0.0	0	0.0	1	1.5										
FUNCTIONAL CHECK PILOT STAGE (FCP)																								
FCP	FCP	6610	INTRO AFCS (B-CARD)	X							1.5			D	S/A	1		*					6610
	FCP	6611	REVIEW AFCS (B-CARD)	X	X	X							1.5	D	A	1		*	6610				6611
	FCP	6612	INTRO MECH (C-CARD)	X							1.5			D	S/A	1		*					6612
	FCP	6613	REV MECH (C-CARD)	X	X	X							1.5	D	A	1		*	6612				6613
	FCP	6614	INTRO ENGINES (D-CARD)	X							1.5			D	S/A	1		*					6614
	FCP	6615	REV ENGINES (D-CARD)	X	X	X							1.5	D	A	1		*	6614				6615
	FCP	6616	INTRO A CARD	X	X	X					1.5			D	S/A	1		*	6610,6612,6614				6616
	FCP	6617	FCP EVAL	X	X	X							1.5	D	A	1		*	6610-6616				6617
TOTAL FCP STAGE								0	0.0	4	6.0	4	6.0										

AVIATION CAREER PROGRESSION MODEL (ACPM)																								
	ACPM	8200	MACCS AGENCIES, FUNCTIONS AND CONTROL OF AIRCRAFT AND MISSLES	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	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 CONTRACT INSTRUCTOR STAGE								26	13.9	0	0.0	0	0.0											

2.19 FRS T&R SYLLABUS MATRIX (1000, 5000, & 6000)

CH-53E PILOT FRS T&R MATRIX (1000, 5000, and 6000 PHASE)

SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC	REF	SER CONV	MAIN	MOD REF	CIUT	#	ACAD	#	SIM	#	FLT	COND	DEVIC	#	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																								
COMPUTER BASED TRAINING (CBT), ACADEMICS (ACAD), & LAB (LAB) STAGE																								
ACAD	CBT	0001	INTRO TO THE CH-53	X	X	X		X	X		1.0								*					0001
	CBT	0002	AUXILIARY POWER PLANT	X	X	X		X	X		1.0								*	0001				0002
	CBT	0003	ELECTRIC SYSTEM	X	X	X		X	X		2.0								*	0001				0003
	CBT	0004	HYDRAULIC SYSTEM	X	X	X		X	X		2.0								*	0001				0004
	CBT	0005	FUEL SYSTEM	X	X	X		X	X		1.5								*	0001				0005
	CBT	0006	ENGINES	X	X	X		X	X		2.5								*	0001				0006
	CBT	0007	DRIVE TRAIN	X	X	X		X	X		2.5								*	0001				0007
	CBT	0008	CHIP DETECTING SYSTEM	X	X	X		X	X		1.0								*	0006,0007				0008
	CBT	0009	ROTOR SYSTEM	X	X	X		X	X		1.0								*	0001				0009
	CBT	0010	FLIGHT CONTROL SYSTEM	X	X	X		X	X		3.0								*	0004,0009				0010
	CBT	0011	AFCS	X	X	X		X	X		2.0								*	0004,0010				0011
	CBT	0012	BLADE/PYLON FOLD & RB	X	X	X		X	X		2.5								*	0004				0012
	CBT	0013	LANDING GEAR & WHEEL	X	X	X		X	X		1.5								*	0004				0013
	CBT	0014	MISCELLANEOUS SYSTEMS	X	X	X		X	X		3.0								*	0001				0014
	CBT	0015	COMM NAV SYSTEMS	X	X	X		X	X		2.0								*	0001				0015
	CBT	0016	ASE	X	X	X		X	X		2.5								*	0001				0016
	CBT	0017	PREFLIGHT PLANNING	X		X			X		2.0								*	0001-0016				0017
	CBT	0018	INTRO TO FLIGHT PHASE	X		X			X		3.0								*	0017				0018
	CBT	0019	NIGHT FLIGHT	X		X			X		1.5								*	0017				0019
	CBT	0020	INST FLIGHT & NAV	X		X			X		2.5								*	0017				0020
	CBT	0021	VFR NAV, GPS, & HNVS	X		X			X		2.5								*	0017				0021
	CBT	0022	FORM	X		X			X		1.0								*	0017				0022
	CBT	0023	CALs	X		X			X		1.0								*	0017				0023
	CBT	0024	EXT OPS	X		X			X		2.0								*	0017				0024
	ACAD	0100	GS IN-BRIEF	X					X		1.0								*	0001-0016				0100
	ACAD	0101	ELECTRICAL SYSTEMS	X					X		3.0								*	0001-0016				0101
	ACAD	0102	HYDRAULIC SYSTEM	X					X		3.0								*	0001-0016				0102
	ACAD	0103	FUEL SYSTEM	X					X		2.0								*	0001-0016				0103
	ACAD	0104	ENGINES AND APP	X					X		3.0								*	0001-0016				0104
	ACAD	0105	DRIVE TRAIN & ROTOR	X					X		3.0								*	0001-0016				0105
	ACAD	0106	FLIGHT CONTROL SYSTEM	X					X		3.0								*	0001-0016				0106
	ACAD	0107	(AFCS)	X					X		2.0								*	0001-0016				0107
	ACAD	0108	COMM/NAV SYSTEMS	X					X		1.5								*	0001-0016				0108
	ACAD	0109	(CRM) INITIAL	X					X		2.5								*					0109
	LAB	1000	PREFLIGHT INSP INTRO	X	X			X			2.0			1	0.0				*	0100-0108				
	LAB	1001	PREFLIGHT INSP PRAC	X	X			X			2.0			1					*	1000				
	LAB	1002	REVIEW PREFLIGHT	X	X			X			2.0			1						1001				
TOTAL CBT, ACAD, & LAB STAGE										34	145.5	0	0.0	0	0.0									
FAMILIARIZATION (FAM) STAGE																								
FAM	SFAM	1100	INTRO COCKPIT PROC	X	X	X		X					1.0				S	1	*	0017				1100
	SFAM	1101	INTRO A/C EMER	X									1.0				S	1	*	0018,1100				1101

CH-53E PILOT FRS T&R MATRIX (1000, 5000, and 6000 PHASE)																									
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC	REF	SER CONV	MAIN	MOD REF	CIUT	#	ACAD	#	SIM	#	FLT	COND	DEVIC	#	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																									
	SFAM	1102	INTRO ENGINE MAL	X									1.0				S	1	*	1101				1102
	SFAM	1103	INTRO RUNNING LANDINGS&AUTOS	X									1.0				S	1	*	1102				1103
	SFAM	1104	INTRO GEARBOX MAL	X									1.0				S	1	*	1103				1104
	SFAM	1105	INTO CRM SKILLS	X	X	X		X					1.5				S	1	*	1104				1105
	SFAM	1106	PROGRESS CHECK	X	X	X		X					1.0				S	1	*	1105				1106
	SFAM	1107	NS ADAPTATION	X		X							1.0			NS	S	1	*	0019,1106				1107
	FAM	1110	INTRO COCKPIT & FLIGHT PROC	X		X									1.5		A	1	*	1002,1106				1110
	FAM	1111	INTRO PREC HOVER/LOW WORK	X											1.5		A	1	*	1110				1111
	FAM	1112	INTRO ENG FAILURES	X				X							1.5		A	1	*	1111				1112
	FAM	1113	INTRO NO HOVER	X											1.5		A	1	*	1112				1113
	FAM	1114	INTRO AFCS FAILURE	X	X	X		X							1.5		A	1	*	1113				1114
	FAM	1115	INTRO HIGH AOB MANEUVERS	X											1.5		A	1	*	1114				1115
	FAM	1116	PRACTICE ALL FAMS & EPS	X	X	X		X							1.5		A	1	*	1115				1116
	FAM	1117	PRACTICE ALL FAMS & EPS	X											1.5		A	1	*	1116				1117
	FAM	1118	REVIEW ALL FAMS & EPS	X	X	X		X							1.5		A	1	*	1117				1118
	FAM	1119	PROGRESS CHECK	X											1.5		A	1	*	1118				1119
	FAM	1201	INTRO NS LOW AND PATTERN WORK	X											1.5	NS	A	1	*	1107,1600				1201
	FAM	1202	PRACTICE NS LOW& PATTERN WORK	X	X	X		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 INST	X		X							1.0				S	1	*	0020				1300
	SINST	1301	INTRO PARTIAL PANEL	X	X	X							1.0				S	1	*	1300				1301
	SINST	1302	INTRO ILS/LOCALIZER	X	X	X							1.0				S	1	*	1301				1302
	SINST	1303	INTRO UNUSUAL ATT	X	X	X							1.0				S	1	*	1302				1303
	SINST	1304	INTRO IFR LOST COMM	X									1.0				S	1	*	1303				1304
	INST	1305	INTRO BASIC INST	X	X	X		X							2.0	(N)	A	1	*	1304				1305
	INST	1306	INST PROGRESS CHECK	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				S	1	*	0021				1400
TOTAL NAV STAGE										0	0.0	1	1.0	0	0.0										

CH-53E PILOT FRS T&R MATRIX (1000, 5000, and 6000 PHASE)																									
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC	REF	SER CONV	MAIN	MOD REF	CIUT	#	ACAD	#	SIM	#	FLT	COND	DEVIC	#	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																									
FORMATION (FORM) STAGE																									
FORM	SFORM	1500	INTRO DAY FORM	X	X	X		X					1.0				S	1	*	0022				1500
	FORM	1501	INTRO PARADE,CRUISE AND SEC LANDING	X	X	X		X							2.0		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		X							1.0			NS	S	1	*	0019,1107				1600
	CAL	1601	DAY CALS	X	X	X		X							1.5		A	1	*	1111				1601
	CAL	1602	INTRO SEC CALS	X		X									1.5		A	2	*	1501,1601				1602
	CAL	1603	INTRO NS CALS	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		X					2.0				S	1	*	0024				1700
	EXT	1701	INTRO SINGLE POINT	X	X	X		X							1.5		A	1	*	1700,1601				1701
	EXT	1702	INTRO NS SINGLE POINT	X	X	X									1.5	NS	A	1	*	1603,1701				1702
	EXT	1703	INTRO DUAL POINT	X	X			X							1.5		A	1	*	1701				1703
	EXT	1704	INTRO NS DUAL POINT	X	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	X							1.0				S	1	*	2011				1800
	TERF	1801	INTRO TERF	X	X	X									1.5		A	1	*	1601,1800				1801
TOTAL TERF STAGE										0	0.0	1	1.0	1	1.5									
CORE SKILL INTRODUCTION REVIEW (REV) STAGE																									
REV	SREV	1900	REVIEW CSII TRAINING	X	X	X							1.5				S	1	*	1119				1900
	REV	1901	REVIEW CSII TRAINING	X	X	X									1.5		A	1	*	1900`				1901
TOTAL REV STAGE										0	0.0	1	1.5	1	1.5									
CORE SKILL INTRODUCTION EVALUATION (CSIX) STAGE																									
CSIX	CSIX	1902	H2P CHECK	X	X	X		X							2.0		A	1	*	1901		E		1902
TOTAL CSIX STAGE										0	0.0	0	0.0	1	2.0									
TOTAL CORE SKILL INTRODUCTION PHASE										34	145.5	19	21.0	27	42.5									

CH-53E PILOT FRS T&R MATRIX (1000, 5000, and 6000 PHASE)																									
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC	REF	SER CONV	MAIN	MOD REF	CIUT	#	ACAD	#	SIM	#	FLT	COND	DEVIC	#	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																									
INSTRUCTOR TRAINING (5000 PHASE)																									
ACADEMICS STAGE (ACAD)																									
ACAD	ACAD	5000	INSTRUCTIONAL TECH	X							1.0								*						5000
TOTAL ACAD STAGE										1	1.0	0	0.0	0	0.0										
FLEET REPLACEMENT SQUADRON INSTRUCTOR E STAGE (FRSI)																									
FRSI	FRSI	5500	FRSI UT DAY FAM	X											1.5	D	A	1	*	6203,5202					5500
	SFRSI	5502	FRSI UT INSTR	X									2.0			(N)	S/A	1	*	6203,5202					5502
	FRSI	5503	FRSI UT DAY CAL	X											1.5	D	A	1	*	5500					5503
	FRSI	5504	FRSI UT DAY FORM	X											1.5	D	A	2	*	5500					5504
	FRSI	5505	FRSI UT EXT	X											1.5	D	A	1	*	5500					5505
	FRSI	5506	FRSI CHECK	X	X										1.5	(N)	A	1	*	5500-5505					5506
TOTAL FRSI STAGE										0	0.0	1	2.0	5	7.5										
NIGHT SYSTEM FAMILIARIZATION INSTRUCTOR STAGE (NSFI)																									
NSFI	NSFI	5600	NSFI UT HLL NS FAM	X											1.5	NS	A	1	*	MAWTS-1 CC					5600
	NSFI	5601	NSFI UT HLL NS FORM	X											1.5	NS	A	2	*	MAWTS-1 CC					5601
	NSFI	5602	NSFI UT HLL EXT	X											1.5	NS	A	1	*	MAWTS-I CC					5602
	NSFI	5603	NSFI CHECK	X	X										1.5	NS	A	1	*	MAWTS-1 CC					5603
TOTAL NSFI STAGE										0	0.0	0	0.0	4	6.0										
CI SIMULATOR FAM STAGE (SFAM)																									

CH-53E PILOT FRS T&R MATRIX (1000, 5000, and 6000 PHASE)																									
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC	REF	SER CONV	MAIN	MOD REF	CIUT	#	ACAD	#	SIM	#	FLT	COND	DEVIC	#	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																									
CIUT	CIUT	5900	INTRO TO COCKPIT PROCEDURES						X				1.0			D	S	1	*	CBT/ACAD COMP				5900
	CIUT	5901	INTRO TO A/C EMERGENCIES						X				1.0			D	S	1	*	0018~CIUTE				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
	CI UT	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									

CH-53E PILOT FRS T&R MATRIX (1000, 5000, and 6000 PHASE)																									
SKILL	STAGE	TRNG CODE	DESCRIPTION	BASIC	REF	SER CONV	MAIN	MOD REF	CIUT	#	ACAD	#	SIM	#	FLT	COND	DEVIC	#	REFLY	PREREQUISITE	CHAINING	EVAL	EOM	EVENT CONV
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																									
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)																									
NATOPS STAGE																									
NATOPS	NATOPS	6000	NATOPS OPEN BOOK EXAM	X	X	X	X				3.0						ACAD		365				X	6000
	NATOPS	6001	NATOPS CLOSED BOOK EXAM	X	X	X	X				1.0						ACAD		365	6000			X	6001
	NATOPS	6002	NATOPS ORAL EXAM	X	X	X	X				2.0						ACAD		365	6001			X	6002
	NATOPS	6004	MONTHLY EP EXAM	X	X	X	X				1.0						ACAD		30				X	6004
	NATOPS	6100	NATOPS EVALUATION	X	X	X	X								1.5	(N)	S/A	1	365	6002	6000,6001, 6002,6004	E	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	X				3.0						ACAD		365				X	6003
	CRM	6101	PRACTICE CRM PRICIPLES	X	X	X	X								1.5	(N)	S/A	1	365	6003		E	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	X				4.0						ACAD		365				X	6005
	INST	6006	WRITTEN INSTRUMENT EXAM	X	X	X	X				1.0						ACAD		365	6005			X	6006
	INST	6102	INSTRUMENT EVALUATION	X	X	X	X								1.5		S/A	1	365	6006		E	X	6102
TOTAL INST STAGE										2	5.0	0	0.0	1	1.5									

2.20 AIRCREW ACADEMIC/GROUND TRAINING APR TRACKER

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET				
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-0001	INTRO TO THE CH-53			
CBT-0002	THE AUXILLARY POWER PLANT			
CBT-0003	THE ELECTRICAL SYSTEM			
CBT-0004	HYDRAULIC SYSTEM			
CBT-0005	FUEL SYSTEM			
CBT-0006	ENGINES			
CBT-0007	DRIVE TRAIN			
CBT-0008	CHIP DETECTING SYSTEM			
CBT-0009	ROTOR SYSTEM			
CBT-0010	FLIGHT CONTROL SYSTEM			
CBT-0011	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)			
CBT-0012	BLADE/PYLON FOLD AND ROTOR BRAKE SYSTEM			
CBT-0013	LANDING GEAR AND WHEEL BRAKE SYSTEM			
CBT-0014	MISCELLANEOUS SYSTEM			
CBT-0015	COMMUNICATION AND NAVIGATION SYSTEMS			
CBT-0016	AIRCRAFT SURVIVABILITY EQUIPTMENT			
CBT-0017	PREFLIGHT PLANNING AND PROCEDURES			
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-0100	GROUND SCHOOL INTRO IN-BRIEF			
ACAD-0101	ELECTRICAL SYSTEM			
ACAD-0102	HYDRAULIC SYSTEM			
ACAD-0103	FUEL SYSTEM			
ACAD-0104	ENGINES AND THE AUXILLARY POWER PLANT			
ACAD-0105	DRIVE TRAIN AND ROTOR SYSTEM			

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET				
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 E ACADEMIC PHASE (0000)	DD/MM/YY	NAME OR SELF PACED	NAME
ACAD-0106	FLIGHT CONTROL SYSTEM			
ACAD-0107	AUTOMATED FLIGHT CONTROL SYSTEM (AFCS)			
ACAD-0108	COMMUNICATION AND NAVIGATION SYSTEMS			
ACAD-0109	CREW RESOURCE MANAGEMENT (CRM) INITIAL			
LAB-0110	INTRODUCE PREFLIGHT INSPECTION PROCEDURES			
LAB-0111	PRACTICE PREFLIGHT INSPECTION PROCEDURES			
LAB-0112	REVIEW PREFLIGHT INSPECTION PROCEDURES (PRIOR TO FIRST FAM)			
ADDITIONAL FRS ACADEMIC/GROUND CLASSES				

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET

SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING

NAME (Last, first, middle initial)	Last 4 SSN

T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	ADDITIONAL FRS PHASE ACADEMIC/GROUND CLASSES (0000)	DD/MM/YY	NAME OR SELF PACED	NAME

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-2000	(U) CH-53 GPS (FAM STAGE)			
ACAD-2001	(U) ARC-210/HAVEQUICK/SINCGARS(*)			
ACAD-2002	(U) AN/AYK-28			
ACAD-2003	(U) CH-53 INTERNAL CARGO OPERATIONS			
ACAD-2004	(S) CH-53 AAR/ALE-47 (*)			
ACAD-2005	(U) CH-53 TACFORM			
ACAD-2006	(U) CH-53 PFPS TECHNIQUES			
ACAD-2007	(U) DESERT OPERATIONS(*)			
ACAD-2008	(U) MOUNTAIN OPERATIONS(*) (CAL **STAGE**)			
ACAD-2009	(U) COMBAT AIRCREW COORDINATION			
ACAD-2010	(U) HUD			
ACAD-2011	(U) ASD TERRAIN FLIGHT (TERF STAGE)			
ACAD-2012	(S) CH-53 APR-39 (*)			
ACAD-2013	(S) SURFACE TO AIR THREAT TO THE MAGTF			
ACAD-2014	(U) HEAVY LIFT OPERATIONS(*) (EXT STAGE)			
ACAD-2015	(U) ASSAULT SUPPORT TO ARTILLERY			
ACAD-2016	(U) CH-53 DM/GTR I (GTR STAGE)			
ACAD-2017	(S) IR SAM THREAT TO ASSAULT SUPPORT(*)			
ACAD-2019	(S) AAQ-24(*)			
ACAD-2020	(S) AAA THREAT TO ASSAULT SUPPORT			
ACAD-2021	(S) EVASIVE MANEUVERS			
ACAD-2022	(U) HAAR(*) (HAAR STAGE)			
ACAD-2023	(U) CH-53 WEAPONS SYSTEMS AND TRAINING (AG STAGE)			
ACAD-2024	(U) WEAPONS EMPLOYMENT TECHNIQUES			
ACAD-2025	(U) INTRO TO LASER SYSTEMS AND SAFETY			
ACAD-2026	(U) MAGTF FSCMS(*) (MARINE NET CLASS)			
ACAD-2027	(U) OBJECTIVE AREA PLANNING(*) (TAC STAGE)			
ACAD-2028	(U) ROE			
ACAD-2029	(U) EXECUTION CHECKLIST			
ACAD-2030	(U) MISSION ANALYSIS(*)			
ACAD-2031	(U) ASSAULT NVG PREFLIGHT AND ADJUSTMENT			
ACAD-2032	(U) NVG SYSTEMS AND IMAGE CHARACTERISTICS			
ACAD-2033	(U) THE NIGHT ENVIRONMENT (HLL STAGE)			
ACAD-2034	(U) MISPERCEPTIONS AND ILLUSIONS			
ACAD-2035	(U) NIGHT ROUTE PLANNING CONSIDERATIONS			
ACAD-2036	(U) NIGHT OPERATIONS AND PLANNING AIDS			
ACAD-2037	(U) HUMAN FACTORS			
ACAD-2038	(U) FLIR TRAINING COURSE			

ACAD-2039	(U) CH-53 HNVS FLIR (LLL STAGE)			
ACAD-2040	(U) ASSAULT SUPPORT ESCORT TACTICS			
ACAD-2041	(U) BATTLEFIELD ILLUMINATION AND FW ITG			

* Denotes annual academic training requirements.

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET

SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING

NAME (Last, first, middle initial)	**Last 4 SSN**

T&R CODE	**ACADEMIC SYLLABUS**	**DATE**	**INSTRUCTOR**	**ENTERED BY**
	MISSION SKILL PHASE (3000)	**DD/MM/YY**	**NAME OR SELF PACED**	**NAME**
ACAD-3000	(U) RAPID RESPONSE PLANNING (EXP STAGE)			
ACAD-3001	(S) REC THREAT TO THE MAGTF (EXP STAGE)			
ACAD-3002	(U) NEO EXECUTION (AT STAGE)			
ACAD-3003	(S) INTELLIGENCE PREPARATION OF THE BATTLE SPACE			
ACAD-3004	(S) PERSONNEL RECOVERY (TRAP STAGE)			
ACAD-3005	(S) CH-53 SPECIFIC TRAP TTPS			
ACAD-3006	(U) CASEVAC (AE STAGE)			
ACAD-3007	(U) CIRCADIAN RHYTHM AND FATIGUE			
ACAD-3008	(U) INTRO TO NVG TACTICAL ENVIRONMENT			
	CORE PLUS SKILL PHASE (4000)			
ACAD-4000	(S) RF SAM (GTR STAGE)			
ACAD-4001	(U) DM GAME PLANNING			
ACAD-4002	(U) CH-53 DM/GTR II (DM STAGE)			
ACAD-4003	(S) HELICOPTER PS AND EM			
ACAD-4004	(S) FW Threat to Assault Support			
ACAD-4005	(S) RW Threat to Assault Support			
ACAD-4006	(U) RGR (TAC STAGE)			
ACAD-4007	(S) MOUT			
ACAD-4008	(U) JCAS (RAID STAGE)			
ACAD-4009	(U) GCE RAID PLANNING			
ACAD-4010	(U) MAGTF TARGETING AND FIRE SUPPORT PLANNING			
ACAD-4011	(U) TBFDS/MK-105 (ADGR STAGE)			
	INSTRUCTOR TRAINING PHASE (5000)			
ACAD-5000	(U) INSTRUCTIONAL TECHNIQUES			
	FLIGHT LEADERSHIP TRAINING PHASE (6000)			
ACAD-6000	(U) TACTICAL FLIGHT BRIEFING			
ACAD-6001	(U) AMC			

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AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET				
SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	AVIATION CAREER PROGRESSION MODEL PHASE (8000)	DD/MM/YY	NAME OR SELF PACED	NAME
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: WEAPONEERING 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			

* Denotes annual academic training requirements.

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET				
SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING				
NAME (Last, first, middle initial)		Last 4 SSN		
T&R CODE	ACADEMIC SYLLABUS	DATE	INSTRUCTOR	ENTERED BY
	AVIATION CAREER PROGRESSION MODEL PHASE (8000)	DD/MM/YY	NAME OR SELF PACED	NAME
DIVISION LEAD SYLLABUS				
ACPM-8640	(U) JOINT DATA NETWORK			
ACPM-8641	(U) MAGTF THEATER AND NATIONAL ISR EMPLOYMENT			
FLIGHT LEAD SYLLABUS				
ACPM-8620	(U) ESG/CSG INTEGRATION			

* Denotes annual academic training requirements.

AIRCREW PERFORMANCE RECORD/QUALIFICATION JACKET

SECTION IIIB-AIRCREW ACADEMIC/GROUND SCHOOL TRAINING

NAME (Last, first, middle initial)	Last 4 SSN

T&R CODE	ACADEMIC SYLLABUS ADDITIONAL PHASE ACADEMIC/GROUND CLASSES (2000-8000)	DATE DD/MM/YY	INSTRUCTOR NAME OR SELF PACED	ENTERED BY NAME

CHAPTER 3

CH-53 CREW CHIEF (MOS 6173)

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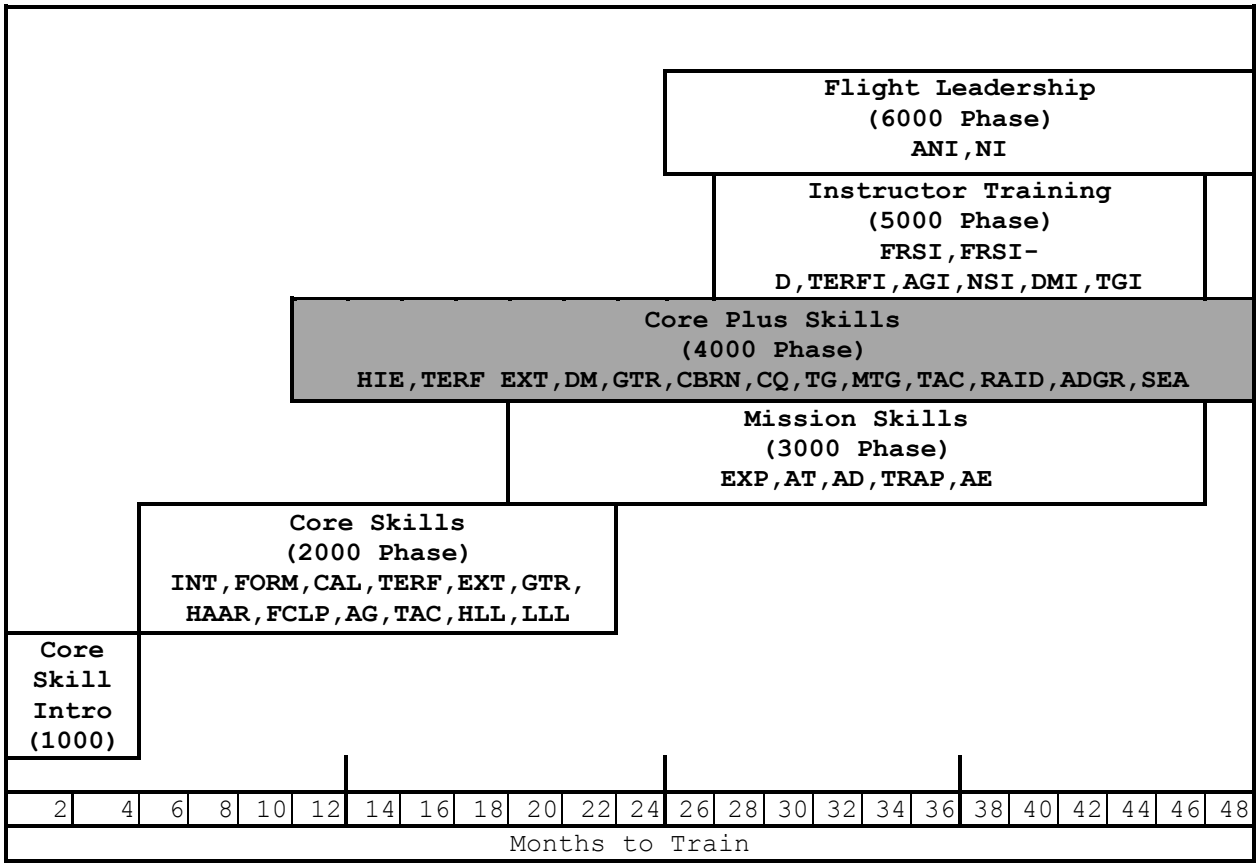
CHAPTER 3

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, and Mission Skills, and Core Plus Skills. The goal of this chapter is to develop individual and unit war fighting capabilities.

3.1 CREW CHIEF (6173) TRAINING PROGRESSION MODEL: This model represents the recommended training progression for the average Crew Chief (6173) crewmember. Units should use the model as a point of departure to generate individual training plans.



3.2 ABBREVIATIONS

CREW CHIEF POSITION	
CORE/MISSION/CORE PLUS SKILL ABBREVIATIONS	
CORE SKILLS (2000 Phase)	
ACAD	Academic Lectures
INT	Internal Stage
FORM	Formation Stage
CAL	Confined Area Landing Stage
TERF	Terrain Flight Stage

EXT	External Stage
GTR	Ground Threat Reaction Stage
FCLP	Field Carrier Landing Practice Stage
AG	Aerial Gunnery Stage
TAC	Tactics Stage
NS HLL	Night Systems High Light Level Stage
NS LLL	Night Systems Low Light Level Stage
MISSION SKILLS (3000 Phase)	
ACAD	Academic Lectures
EXP	Expeditionary Shore Based Tactics Stage
AT	Assault Transport Tactics Stage
AD	Aerial Delivery Tactics Stage
TRAP	Tactical Recovery of Aircraft and Personnel Stage
AE	Aerial Evacuation Tactics Stage
CORE PLUS SKILLS (4000 Phase)	
ACAD	Academic Lectures
HIE	Helicopter Insertion and Extraction Techniques Stage
ADGR	Aviation Delivered Ground Refueling Stage
TERF EXT	Terrain Flight Externals Stage
DM	Defensive measures Stage
GTR	Ground Threat Reaction Stage
CBRN	Chemical, Biological, Radiation, and Nuclear Stage
CQ	Carrier Qualification Stage
TG	Tail Gunnery
MTG	Moving Target Gunnery Stage
TAC	Tactics Stage
MISSION PLUS SKILLS (4000 PHASE)	
RIE	Rapid Insert and Extract Tactics Stage
ADGR	Aviation Delivered Ground Refueling Tactics Stage
SEA	Sea Based Tactics Stage

3.3 DEFINITIONS

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

	Skill to attain CSP.
Mission Skill Proficiency (MSP)	MSP is a measure of training completion for 3000 Phase events. MSP is attained by executing all events listed in the Attain Table for each Mission Skill. The individual must be simultaneously proficient in all events within that Mission Skill to attain MSP. MSP is directly related to Training Readiness.
Core Plus Skill Proficiency (CPSP)	CPSP is a measure of training completion for 4000 Phase "Skill" events. CPSP is attained by executing all events listed in the Attain Table for each Core Plus Skill. The individual must be simultaneously proficient in all events within that Core Plus Skill to attain CPSP.
Core Plus Mission Proficiency (CPMP)	CPMP is a measure of training completion for 4000 Phase "Mission" events. CPMP is attained by executing all events listed in the Attain Table for each Core Plus Mission. The individual must be simultaneously proficient in all events within that Core Plus Mission to attain CPMP.

3.4 INDIVIDUAL CORE/MISSION/CORE PLUS SKILL PROFICIENCY REQUIREMENTS

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

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

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

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

Note

Individual may be attaining proficiency in some Core/Mission/Core Plus Skills while Maintaining proficiency in other Core/Mission/Core Plus Skills.

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

Note

See T&R Program Manual Chapter 2 for amplifying information on POI updating.

CH-53E CREW CHIEF ATTAIN AND MAINTAIN PROFICIENCY (2000-4000)						
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	ATTAIN PROFICIENCY		MAINTAIN POI
				BASIC POI	REFRESHER POI	
CORE SKILLS (2000 Phase)						
INT	INT	2100	CARGO LAB	2100	2100	
	INT	2101	PAX LAB	2101	2100	
	INT	2105	CARGO	2105	2105	2105
	INT	2106	PAX	2106	2106	2106
FORM	FORM	2110	DAY FORM	2110	2110	2110
CAL	CAL	2210	CALS	2210	2210	2210
	CAL	2211	SECTION CALS	2211	2211	2211

CH-53E CREW CHIEF ATTAIN AND MAINTAIN PROFICIENCY (2000-4000)						
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	ATTAIN PROFICIENCY		MAINTAIN POI
				BASIC POI	REFRESHER POI	
TERF	TERF	2310	TERF	2310	2310	2310
	TERF	2311	SECTION TERF	2311	2311	2311
EXT	EXT	2410	SINGLE POINT	2410	2410	2410
	EXT	2411	DUAL POINT	2411	2411	2411
	EXT	2420	HLL SINGLE POINT	2420	2420	2420
	EXT	2421	HLL DUAL POINT	2421	2421	2421
	EXT	2430	LLL EXTERNALS	2430	2430	2430
GTR	GTR	2540	NON RADAR GTR	2540	2540	2540
FCLP	FCLP	2710	DAY FCLP	2710	2710	2710
	FCLP	2742	NS FCLP	2742	2742	2742
AG	AG	2800	GAU-21 LAB	2800	2800	
	AG	2801	GAU-21 MWPC LAB	2801	2801	
	AG	2802	Weapon Proc LAB	2802	2802	
	AG	2812	DAY AG	2812	2812	2812
	AG	2813	DAY SEC AG	2813	2813	2813
	AG	2842	NIGHT AG	2842	2842	2842
	AG	2843	NIGHT SEC AG	2843	2843	2843
TAC	TAC	2910	DAY LOW THREAT	2910	2910	2910
	TAC	2911	DAY MED THREAT	2911	2911	2911
NS HLL	HLL	2120	HLL FORM	2120	2120	2120
	HLL	2220	HLL CALS	2220	2220	2220
	HLL	2221	HLL SEC CALS	2221	2221	2221
	HLL	2320	HLL TERF	2320	2320	2320
	HLL	2321	HLL SEC TERF	2321	2321	2321
	HLL	2920	HLL LOW THREAT	2920	2920	2920
NS LLL	LLL	2230	LLL CALS	2230	2230	2230
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2330	LLL TERF	2330	2330	2330
	LLL	2331	LLL SEC TERF	2331	2331	2331
	LLL	2930	LLL MED THREAT	2930	2930	2930
MISSION SKILLS (3000 Phase)						
EXP	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	EXP	3140	EXP SHORE BASED OPS	3140	3140	3140
AT	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	ACAD	3002	NEO EXECUTION	3002		
	AT	3240	ASSAULT TRANSPORT	3140	3140	3140
AD	EXT	2430	LLL EXTERNALS	2430	2430	2430
	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	AD	3340	AERIAL DELVIERY	3340	3340	3340
TRAP	EXT	2430	LLL EXTERNALS	2430	2430	2430
	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	ACAD	3004	(S) PERSONNEL RECOVERY	3004		
	ACAD	3005	(S) CH53 SPEC TRAP TTPS	3005		
	TRAP	3440	TRAP	3440	3440	3440

CH-53E CREW CHIEF ATTAIN AND MAINTAIN PROFICIENCY (2000-4000)						
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	ATTAIN PROFICIENCY		MAINTAIN POI
				BASIC POI	REFRESHER POI	
AE	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	ACAD	3006	(U) CASEVAC	3006		
	AE	3540	AERIAL EVACUATION	3540	3540	3540
CORE PLUS (4000 Phase)						
HIE	HIE	4110	HELOCAST	4110	4110	4110
	HIE	4140	RAPPEL	4140	4140	4140
	HIE	4141	PARAOPS	4141	4141	4141
ADGR	ADGR	4200	TBFDS STATIC TRAINING	4200	4200	
	ADGR	4240	TBFDS OPERATION	4240	4240	4201
TERF EXT	TERF EXT	4412	DAY TERF EXTERNALS	4412	4412	4412
	TERF EXT	4440	NS TERF EXTERNALS	4440	4440	4440
DM	DM	4510	RW DM	4510	4510	4510
	DM	4511	FW DM	4511	4511	4511
GTR	GTR	4540	RADAR GTR	4540	4540	4540
CBRN	CBRN	4600	CBRN	4600		
CQ	CQ	4711	DAY CQ	4711	4711	4711
	CQ	4743	NIGHT CQ	4743	4743	4743
TG	TG	4800	STATIC TG TRAINING	4800	4800	
	TG	4810	DAY TG	4810	4810	
	TG	4811	DAY SECTION TG	4811	4811	4811
	TG	4840	NIGHT SECTION TG	4840	4840	4840
MTG	MTG	4841	MTG	4841	4841	4841
TAC	TAC	4940	DIV TAC	4940	4940	4940
	TAC	4941	URBAN TAC	4941	4941	4941
RIE	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	RIE	4980	RIE	4980	4980	4980
ADGR	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	ADGR	4240	TBFDS OPERATION	4240	4240	4201
	ADGR	4981	ADGR TACTICS	4981	4981	4981
SEA	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	SEA	4982	SEA BASED	4982	4982	4982

3.5 REQUIREMENT, CERTIFICATION, QUALIFICATION AND DEIGNATION TABLES: The tables below delineate T&R events required to be completed to attain proficiency for select certifications, qualifications and designations. In addition to event requirements, all required stage lectures, briefs; squadron training, prerequisites, and other criteria shall be completed prior to completing final events. Certifications, qualification and designation letters signed by the Squadron Commanding Officer shall be placed in training Performance Records and NATOPS.

3.5.1 Individual Qualification Requirements

INDIVIDUAL QUALIFICATION REQUIREMENTS	
Qualification	**Event Requirements**
TERF	2310,2311
NSQ HLL	2120,2220,2221,2320,2321,2920
NSQ LLL	2230,2231,2330,2331,2930
AG	2800,2801,2802,2812,2813,2842,2843
DM	4510,4511
TG	4800,4810,4811,4840
NATOPS	6100

3.5.2 Individual Designation Requirements

INDIVIDUAL DESIGNATION REQUIREMENTS	
Designation	**Event Requirements**
NATOPS	6000,6001,6002,6101
CRM	6003,6101
TERFI	5700,5701
NSI	5900,5901,5902
AGI	5400 Through 5408
DMI	5800,5801,5802
FRSI	5100 Through 5107
NSFI	5600,5601,5602
WTI	See CH-53 Course Catalog

3.6 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.

3.6.1 Basic, Conversion, and Transition POI

CH-53E CREW CHIEF Basic POI		
Weeks	Phase of Instruction	Unit
4-12	Crew Chief	N/A
12-24	Core Skill Training	Tactical Squadron
24-36	Mission Skill Training	Tactical Squadron
52+	Core Plus Training	Tactical Squadron

3.6.2 Refresher POI

CH-53E CREW CHIEF Refresher POI		
Weeks	Phase of Instruction	Unit
4-12	Core Skill Training	Tactical Squadron
12-24	Mission Skill Training	Tactical Squadron
52+	Core Plus Training	Tactical Squadron

3.6.3 Fleet Replacement Instructor FRSI POI.

CH-53E CREW CHIEF Instructor Training		
Weeks	Phase of Instruction	Unit
3	FRSI Academics	Fleet Replacement Squadron
3	Instructor Training	Fleet Replacement Squadron

3.7 SYLLABUS NOTES

3.7.1 AIRCREW TRAINING REFERENCES. Aircrew shall use the following references to ensure safe and standardized training procedures, grading criteria, and aircraft operation.

AICREW TRAINING REFERNCES	
Designator	**Title**
OPNAVIST 3710.7	NATOPS General Flight and Operating Instructions
NAVAIR 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 4-23E	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
TBFDS APCL-CH53E	TBFDS Aircrew Pocket Checklist
EA Academic support package	MAWTS-1 Course Catalog
EA Instructor support package	MAWTS-1 Course Catalog
GTR program guide	MAWTS-1 Ground Threat Reaction program guide
DM program guide	MAWTS-1 Defensive Measures program guide
NTRP 3-22.4	Naval Aviation Technical Information

3.7.2 General

3.7.2.1 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.

3.7.2.2 All events shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques.

3.7.2.3 Aircrew shall fly night events in accordance with the table of acronyms for environmental conditions.

3.7.3 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/CPP 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.		

3.7.4 Basic, Conversion, and Transition POI: Crew Chiefs assigned to

Basic (B), Conversion (C), and Transition (T) POIs shall fly the entire Basic (B) POI.

3.7.5 Refresher POI

3.7.5.1 Crew Chief Refresher. 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 my tailor the individual's Refresher POI per the squadron standardization board recommendations and IAW NAVMC 3500.14 Chapter 2. When the (R) coded events within a stage of training are complete, the 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.

3.7.5.2 Re-Qualification (TERFQ, AGQ, NSQ HLL, NSQ LLL, TGQ, DMQ). Upon demonstration of proficiency, by flying those (R) coded events, IAW the Program Manual NAVMC 3500.14, within the applicable stage in a specific core skill, aircrew may be re-qualified at the discretion of the Squadron Commanding Officer.

3.7.5.3 Instructor Re-Designation (TERFI, AGI, 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.

3.7.5.4 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 by 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.

3.7.6 Aviation Training Forms (ATF)

3.7.6.1 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".

3.7.6.2 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".

3.7.6.3 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.

3.7.6.4 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.

3.7.6.5 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://vcepub.tecom.usmc.mil/sites/msc/magtftc/mawts1/departments1/ASD/CH-53%20Division.aspx

3.7.6.6 The ATFs shall be logged in order of the "T&R Tracker Table" with the highest numbered T&R code place on top.

3.7.6.7 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.

3.7.6.8 All "UNSATISFACTORY" ATFs shall be logged in the same order and shall remain the individuals APR jacket.

3.7.6.9 The T&R Tracker Table shall be placed in section 3 of the APR and placed on top of the T&R Evaluated Flights Tab. The tracker table is located in the MAWTS-1 course catalog Appendix F.

3.7.7 Regaining CSP/MSP Proficiency

3.7.7.1 Individual. For an individual to regain proficiency of a single "delinquent event" (i.e. event re-fly interval exceeded) in a Core/Mission/Core Plus Skill, the individual is required to complete that "delinquent event" with another crewmember who is proficient in that event.

NOTE

See NAVMC 3500.14 Chapter 3 for specific requirements in Low Level Flight/TERF, Night Systems, and Air Combat Maneuvering/DM.

3.7.7.2 If all events in the Maintain Table/POI for a Core/Mission/Core Plus Skill. The individual must re-fly all delinquent R-coded events in the Attain Table for that Core/Mission/Core Plus Skill.

3.7.7.3 Unit. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing event(s) with instructors from another like unit; if not feasible, proficiency shall be regained by completing event(s) with another instructor. If a unit has only one instructor and another instructor is not available, instructor proficiency shall be regained as designated by the Squadron Commanding Officer.

3.7.8 Qualifications. Qualifications are assigned to personnel based on demonstration of proficiency in a specific skill (i.e. FORM, CALS, TERF, EXT, HLL, LLL, etc.). All qualifications are assigned one or more T&R qualification events. When all qualifications requirements and events are completed, the individual may be granted the respective qualification by the Squadron Commanding Officer. Proficiency statuses of these qualification events are used to determine qualification status; an individual qualification status may be either "Qualified" or "Not Qualified".

3.7.8.1 Loss of Qualifications. If an individual goes delinquent in all

associated qualification events, the qualification is lost and the status automatically reverts to "Not Qualified." Individuals do not lose a qualification as a function of re-fly factor for individual events. Loss of proficiency resulting from being delinquent on all associated qualification events (events with measurable re-fly factor; excluding one-time events '*') constitutes loss of that qualification.

3.7.8.2 Re-Qualification. Re-qualification requires demonstration of proficiency in a specific skill. To regain a lost qualification due to delinquency, the individual must re-complete all R-coded qualifications events. Upon completion, the qualification status automatically reverts back to "Qualified." Normally qualification regained in this manner requires no additional documentation.

3.7.9 Acronyms for crew requirements

Acronyms for Crew Requirements	
Acronym	**Definition**
CCUI	Crew Chief Under Instruction
CC	Crew Chief
AOUI	Aerial Observer Under Instruction
AO	Aerial Observer

3.7.10 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.	

3.7.11 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.
E-Coded	An event evaluation form is required each time the event is logged. Requires evaluation by a certified standardization instructor (NATOPS I, Assistant NATOPS I, WTI, etc.)

3.7.12 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.

3.7.12.1 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.

3.7.12.2 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.

3.7.12.3 The EATM shall manually update the training code in MSHARP.

3.7.12.4 The EATM shall log the academic/ground training event on the Academic Tracker.

3.7.12.5 The EATM shall ensure that the Academic Tracker is located in the individuals APR jacket in section 3 under the ground school tab.

3.7.12.6 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.

3.7.13 Secondary AMOS Crew Chief

(a) 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:

(b) The number of secondary MOS CCs that an individual unit Commander may train is limited to the current staffing formula; 1.6 CC x primary assigned aircraft (PAA) = 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.

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

(d) 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 ATB (C4610) for approval prior to trainee starting flight syllabus. MSG shall include:

Organization requesting training of secondary AMOS CC.

Name, rank, MOS, and SSN 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 AO NATOPS evaluation report (OPNAV 3710.7 form).

(e) Upon receipt of request, ATB 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:

(f) All Secondary AMOS Crew Chiefs shall be assigned to fly the entire Basic POI. Core Skill, Mission Skill, Core Plus / Mission Plus Skill flights previously flown as an Aerial Observer shall not transfer to the training of the secondary AMOS CC. All flights must be flown with CCUI acting in the capacity of a CC.

(g) 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.

(h) 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.

(i) 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.

(j) 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:

(k) Nominees complete squadron approved open book NATOPS examination.
Nominees are designated a plane captain by unit CO.
Prior to designation, nominees shall attend SERE training.

(l) 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 AO evaluation form, OPNAV 3710/7.

Original CC evaluation form, OPNAV 3710/7.
Copy of SERE completion certificate.

(m) 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.

(n) 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.

(o) 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.

(p) On hand primary designated MOS CC shall have priority for crewmember flight orders IAW MCO1326.2G.

(q) 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.

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

(s) POC for secondary AMOS Crew Chief training program is TECOM ATB.

3.8 CORE SKILL INTRODUCTION PHASE (1000) ACADEMIC SYLLABUS

T&R CODE	ACADEMIC SYLLABUS CORE SKILL INTRODUCTION (1000) CH-53E CBT
CBT-0100	(U) CH-53E HISTORY
CBT-0102	(U) INTERIOR FAMILIARIZATION
CBT-0103	(U) EXTERIOR FAMILIARIZATION
CBT-0118	(U) APP OPERATION
CBT-0119	(U) AFCS
CBT-0120	(U) BLADE SPREAD/FOLD PROCEDURES
CBT-0124	(U) EMERGENCY PROCEDURES
CBT-0126	(U) TAXI / TAKEOFF / IN-FLIGHT CHECKS & PROCEDURES
CBT-0130	(U) INTERNAL CARGO HANDLING
CBT-0190	(U) BEARING MONITOR SYSTEM
T&R CODE	**CH-53 ACADEMICS**
ACAD-0200	(U) COURSE INTRODUCTION BRIEF
ACAD-0201	(U) BASIC GROUND HANDLING AND AIRCRAFT MOVEMENT
ACAD-0202	(U) AIRCRAFT INTERIOR
ACAD-0203	(U) ELECTRONICS COMPARTMENTS
ACAD-0204	(U) LANDING GEAR
ACAD-0205	(U) REFUEL, AUX TANKS, L/R FUSELAGE
ACAD-0206	(U) ENGINES, NOSE GEAR BOX, EAPS

ACAD-0207	(U) AFT MAIN ROTOR PYLON
ACAD-0208	(U) TAIL DRIVE SHAFTS
ACAD-0209	(U) TAIL SKID, IGB, TGB, TAIL SERVO
ACAD-0210	(U) TAIL ROTOR HEAD, ROTOR BLADES
ACAD-0211	(U) MGB, FLIGHT CONTROL MIXER UNIT
ACAD-0212	(U) 2ND STAGE, UTILITY HYDRAULIC
ACAD-0213	(U) AUXILIARY POWER PLANT
ACAD-0214	(U) MAIN ROTOR HEAD AND BLADES
ACAD-0215	(U) MISSION SYSTEMS
ACAD-0216	(U) TURNAROUND INSPECTION
ACAD-0217	(U) REFUELING AND DEFUELING
ACAD-0218	(U) APP OPERATION
ACAD-0219	(U) FLIGHT CONTROLS, AFCS
ACAD-0220	(U) BLADE AND PYLON FOLD AND SPREAD PROCEDURES
ACAD-0221	(U) PLANE CAPTAIN RESPONSIBILITIES
ACAD-0222	(U) NATOPS FLIGHT PROCEDURES
ACAD-0223	(U) PRE/POST FLIGHT INSPECTION
ACAD-0224	(U) EGRESS PROCEDURES
ACAD-0225	(U) CRM
ACAD-0226	(U) START UP/SHUT DOWN PROCEDURES
ACAD-0227	(U) SINGLE POINT ENGINE PLOT/OPERATIONAL POWER CHECK
ACAD-0228	(U) READINESS MANUAL
ACAD-0229	(U) .50 CALIBER MACHINE GUN
ACAD-0230	(U) CARGO LOADING
ACAD-0270	(U) EXTERNAL TRANSPORTATION
ACAD-0280	(U) TERRAIN FLIGHT MANUVERS
ACAD-0290	(U) AIRCRAFT TRACK AND BALANCE
ACAD-0291	(U) IMDS
T&R CODE	**LAB TRAINING (LAB) CH-53E**
LAB-0301	(U) BASIC GROUND HANDLING AND AIRCRAFT MOVEMENT
LAB-0302	(U) AIRCRAFT INTERIOR
LAB-0303	(U) ELECTRONICS COMPARTMENTS
LAB-0304	(U) LANDING GEAR
LAB-0305	(U) REFUEL, AUX TANKS, L/R FUSELAGE
LAB-0306	(U) ENGINES, NOSE GEAR BOX, EAPS
LAB-0307	(U) AFT MAIN ROTOR PYLON
LAB-0308	(U) TAIL DRIVE SHAFTS
LAB-0309	(U) TAIL SKID, IGB, TGB, TAIL SERVO
LAB-0310	(U) TAIL ROTOR HEAD, ROTOR BLADES
LAB-0311	(U) MGB, FLIGHT CONTROL MIXER UNIT
LAB-0312	(U) 2ND STAGE, UTILITY HYDRAULIC
LAB-0313	(U) AUXILIARY POWER PLANT
LAB-0314	(U) MAIN ROTOR HEAD AND BLADES
LAB-0315	(U) MISSION SYSTEMS
LAB-0316	(U) TURNAROUND INSPECTION
LAB-0317	(U) REFUELING AND DEFUELING
LAB-0318	(U) APP OPERATION
LAB-0319	(U) FLIGHT CONTROLS, AFCS
LAB-0321	(U) DAILY INSPECTION
LAB-0322	(U) TURNAROUND INSPECTION
LAB-0323	(U) FLIGHT EQUIPMENT

LAB-0324	(U) EGRESS PROCEDURES
T&R CODE	**CREW CHIEF INSTRUCTOR STAGE (INST)**
FRSI-0500	(U) COMPUTER AIDED INSTRUCTION
FRSI-0501	(U) LAB PERIOD OF INSTRUCTION
FRSI-0502	(U) INSTRUCTIONAL SKILLS
FRSI-0503	(U) PERIOD OF INSTRUCTION
T&R CODE	**EVALUATION STAGE (EVAL)**
EVAL-0600	(U) PLANE CAPTIAN DUTIES
EVAL-0601	(U) PLANE CAPTIAN DUTIES REVIEW

3.8.1 Computer Based Training

3.8.1.1 Purpose. To provide the CCUI with a basic understanding of CH-53E systems and operating characteristics.

3.8.1.2 General. Instructors shall complete all applicable academic events in this phase of training prior to performing instructor duties.

3.8.1.3 Crew Requirement. CCI/CCUI

CBT-0100 1.0 * B,CI,FRSI * * * CBT

Goal: Provide the Crew Chief Under Instruction (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-0102 1.0 * B,CI,FRSI * * * CBT

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 0100

External Syllabus Support: Electronic classroom

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

CBT-0103 1.0 * B,CI,FRSI * * * CBT

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-0118 1.5 * B,CI,FRSI * * * 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-0119 1.0 * B,CI,FRSI * * * CBT

Goal: Introduce CCUI with the control functions and principles of operation of the AFCS.

Requirement:
Introduce:
Collective, yaw and cyclic control functions
AFCS principles of operation

Performance Standard: CCUI is responsible for completing statements to demonstrate understanding of: Collective, yaw and cyclic control functions, and AFCS principles of operation.

Prerequisite: CBT 0103

External Syllabus Support: Electronic classroom

CBT-0120 1.0 * B,CI,FRSI * * * 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 0124 1.0 * B,CI,FRSI * * * 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 0126 1.0 * B,CI,FRSI * * * 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 0130 1.0 * B,CI,FRSI * * * CBT

Goal: Introduce the CCUI to the functionality of cargo securing equipment and how to properly utilize the equipment to secure cargo.

Requirement:

Introduce:
Functionality of cargo securing equipment
Proper use of cargo securing equipment
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 0190 1.0 * B,CI,FRSI * * * CBT

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.

External Syllabus Support: Electronic classroom

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

3.8.2 Academic Training

3.8.2.1 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.

3.8.2.2 General: Instructors shall complete all applicable 0500 stage events in this phase of training prior to performing instructor duties.

3.8.2.3 Crew Requirement: CCI/CCUI

ACAD 0200 2.0 * B,CI,FRSI * * * 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 ADL

Performance Standard: 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.

CCUI is responsible for observing while Instructor performs: Classroom computer access and Basic operation of ADL

Prerequisite: Squadron operations department check-in.

Reference: HMT-302 Marine Enlisted Aircrew Training SOP

ACAD 0201 1.5 * B,CI,FRSI * * * CLSRM

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
- Hazard areas on and around aircraft
- 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, Hazard areas on and around aircraft, and All five safety provisions installed or complied with.

Prerequisite: CBT 0103

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

ACAD 0202 1.0 * B,CI,FRSI * * * 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

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 0203 1.5 * B,CI,FRSI * * * 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

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 1.0 * B,CI,FRSI * * * 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

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

ACAD 0205 1.5 * B,CI,FRSI * * * 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

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

ACAD 0206 1.5 * B,CI,FRSI * * * 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

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

ACAD 0207 1.5 * B,CI,FRSI * * * 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

Reference:
A1-H53CE-MRC-200

A1-H53CE-110-100

ACAD 0208 1.0 * B,CI,FRSI * * * 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: 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.

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

Prerequisite: ACAD 0201

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

ACAD 0209 1.5 * B,CI,FRSI * * * 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, 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

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

ACAD 0210 1.0 * B,CI,FRSI * * * 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

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

ACAD 0211 1.5 * B,CI,FRSI * * * 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

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

ACAD 0212 1.5 * B,CI,FRSI * * * 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

Reference:
A1-H53CE-MRC-200
A1-H53CE-400-100

ACAD 0213 1.5 * B,CI,FRSI * * * 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

Reference:
A1-H53CE-MRC-200
A1-H53CE-400-100
A1-H53CE-110-100
A1-H53CE-260-100

ACAD 0214 1.0 * B,CI,FRSI * * * 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

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

ACAD 0215 1.0 * B,CI,FRSI * * * 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: 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

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.

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

Prerequisite: ACAD 0201, CBT 0130

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

ACAD-0216 1.0 * B,CI,FRSI * * * 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

Reference:
A1-H53CE-MRC-200

ACAD-0217 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with the procedures for refueling, and defueling the CH-53.

Requirement:

Discuss:
Refuel/de-fuel truck considerations
Safety precautions, fire bottle and fuel spills
Hand and arm signals
APP operations

Performance Standard: CCUI is responsible for knowledge of procedures required to perform: refuel/de-fuel truck considerations, safety precautions, fire bottle, fuel spills, hand and arm signals, and APP operation.

Prerequisite: ACAD 0201

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

ACAD-0218 1.0 * B,CI,FRSI * * * 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 0118, ACAD 0201

Reference:
A1-H53CE-220-100
A1-H53CE-MRC-200
A1-H53BE-NFM-000

ACAD-0219 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize CCUI with the nomenclature, and theory of operation of the flight controls and of the AFCS.

Requirement:

Discuss: Nomenclature, and theory of operation:
Collective, yaw and cyclic control functions
AFCS principles of operation

Performance Standards: CCUI is responsible for knowledge of nomenclature, and theory of operation: collective, yaw and cyclic control functions and AFCS principles of operation

Prerequisite: CBT 0119, ACAD 0201

Reference:
A1-H53CE-MRC-200
A1-H53BE-NFM-000
A1-H53CE-570-100
A1-H53CE-140-100

ACAD-0220 1.0 * B,CI,FRSI * * * 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 0120, ACAD 0201

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

ACAD-0221 2.5 * B,CI,FRSI * * * 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.

Prerequisite: ACAD 0201

Reference:
COMNAVFORINST 4790.2

ACAD-0222 4.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with NATOPS flight procedures and Local standard operating procedures for flight.

Requirement:

Discuss:
Scheduling procedures
Air Crew areas of responsibility
Standard terminology
Stages of flight
Emergency procedures

Performance Standard: CCUI is responsible for knowledge of: scheduling procedures, air crew areas of responsibility, standard terminology, stages of flight, and emergency procedures.

Prerequisite: ACAD 0201

Reference:
A1-H53BE-NFM-000
Squadron Flight SOPs

ACAD-0223 4.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with the preflight/post flight inspection criteria for required gear and proper wear of flight equipment.

Requirement:

Discuss:
Preflight inspection of required gear
Post-flight inspection of required gear
Proper wear of flight equipment

Performance Standard: CCUI is responsible for knowledge of: preflight inspection of required gear, post-flight inspection of required gear, and proper wear of flight equipment.

Prerequisite: ACAD 0201

Reference:
A1-H53BE-NFM-000

ACAD-0224 4.0 * B,CI,FRSI * * * 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-0225 2.5 * B,CI,FRSI * * * CLSRM

Goal: Introduce CRM.

Requirement:

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

Performance Standard: CCUI is responsible for knowledge of: decision making, assertiveness, mission analysis, communication, leadership, adaptability/flexibility, and situational awareness.

Reference:
OPNAV INST 1542.7C

ACAD-022 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with common terminology and ICS procedures during aircraft start up and shut down.

Requirement:

Discuss:
Safety considerations
Fire bottle position
Hand and arm signals
Start up checklist
Shutdown checklist
Common terminology

Performance Standard: CCUI is responsible for knowledge of: safety considerations, fire bottle position, hand and arm signals, start up checklist, shutdown checklist, and common terminology.

Prerequisite: CBT 0126, ACAD 0201, ACAD 0222

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

ACAD-0227 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with single point engine plot and operational power check procedures.

Requirement:

Discuss:
Single point engine plot procedures
Operational power check procedures
Utilizing engine plot charts

Performance Standard: CCUI is responsible for knowledge of procedures required to perform: single point engine plot procedures, and operational power check procedures.

Prerequisite: ACAD 0201

Reference:
A1-H53BE-NFM-000

ACAD-0228 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with the content encompassed within the training and readiness manuals.

Requirement:

Discuss:
Content of the program manual NAVMC 3500
Content of the applicable 3500 series manual

Performance Standard: CCUI is responsible for knowledge of: content of the program manual NAVMC 3500, and content of the applicable 3500 series manual.

Reference:
NAVMC 3500 series manuals

ACAD-0229 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI the nomenclature and Theory of Operation and demonstrate handling procedures of the .50 caliber machine gun.

Requirement:

Instructor: GAU-21 AGI or TGI required to give class on the GAU-21 .50 cal machine gun.

Discuss:
Weapon nomenclature
Basic assembly
Head space and timing
Weapons checklist
Troubleshooting procedures
Ammunition

Performance Standard: CCUI is responsible for knowledge of: weapon nomenclature, basic assembly, head space and timing, weapons checklist,

troubleshooting procedures, and ammunition.

Reference:
NAVAIR 11-95GAU-21-1

ACAD-0230 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with the functionality of cargo securing equipment, how to properly utilize the equipment to secure cargo and load aircraft utilizing proper weight and balance and center of gravity techniques.

Requirement:

Discus: Nomenclature, theories of operation and operation of:
Cargo securing equipment
Proper use of cargo securing equipment
Winch operation and procedures
Cargo ramp and flippers operations and procedures
Calculate weight and balance
Load techniques for proper center of gravity preservation

Performance Standard: CCUI is responsible for knowledge of nomenclature, theory of operation and operation of: cargo securing equipment, proper use of cargo securing equipment, winch operation and procedures, cargo ramp and flippers operations and procedures, calculate weight and balance, and load techniques for proper center of gravity preservation.

Prerequisite: CBT 0130, ACAD 0201, ACAD 0215

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

ACAD-0270 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with external transportation of cargo, standard terminology, and operating with a Helicopter Support Team (HST).

Requirement:

Discuss:
Single point external cargo operations
Dual point external cargo operations
Emergency jettison of cargo
Safety considerations while operating with HST

Performance Standard: CCUI is responsible for knowledge of procedures required to perform: single point external cargo operations, dual point external cargo operations, emergency jettison of cargo, and safety considerations while operating with HST.

Prerequisite: ACAD 0201

Reference:
A1-H53BE-NFM-000
A1-H53CE-110-100

ACAD-0280 1.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with terrain flight maneuvers and common terminology.

Requirement:

Discuss:
3 types of terrain flight
Terrain flight maneuvers
Aircraft clearances
Common terminology

Performance Standard: CCUI is responsible for knowledge of procedures required to perform: 3 types of terrain flight, terrain flight maneuvers, aircraft clearances, common terminology.

Prerequisite: ACAD 0201

Reference:
A1-H53BE-NFM-000
ANTTP 3-22.3-CH-53
MAWTS-1 Crew Chief Academic Support Package

ACAD-0290 2.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with the Vibration Analysis Test System (VATS) and Aircraft Track and Balance System (ATABS)

Requirement:

Discuss:
Component nomenclature
Systems operation
Installation of system components

Performance Standard: CCUI is responsible for knowledge of: component nomenclature, systems operation, and installation of system components.

Prerequisite: ACAD 0227

Reference:
A1-H53CE-VIB-000

ACAD-0291 2.0 * B,CI,FRSI * * * CLSRM

Goal: Familiarize the CCUI with the Intergraded Maintenance Diagnostic System (IMDS).

Requirement:

Discuss:
Component nomenclature
Component location
System operation

Performance Standard: CCUI is responsible for knowledge of: component nomenclature, component location, and system operation.

Prerequisite: ACAD 0227

Reference:
A1-H53CE-580-10

3.8.3 LAB Training

3.8.3.1 Purpose: To provide the CCUI with basic skills required to perform CH-53E Daily and Turnaround Inspections and prepare the CCUI and helicopter for flight.

3.8.3.2 General: Instructors shall:

3.8.3.2.1 Complete all applicable 0500 stage events in this phase of training prior to performing instructor duties.

3.8.3.2.2 Be a designated CH-53E Plane Captain.

3.8.3.2.3 Crew Requirement: CCI/CCUI

LAB-0301	2.5	*	B,CI,FRSI	*	*	*	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 high exhaust danger areas
Fire bottle considerations during APP and engine start
Movement of aircraft

Introduce:
Entering/exiting rotor arc
Movement of aircraft

Performance Standard: CCUI is responsible for recognizing and avoiding: rotor arc hazard areas, procedures for entering/exiting rotor arc, radioactive components, engine high exhaust danger areas, and fire bottle considerations during APP and engine start.

CCUI is responsible for performing procedures required for: movement of aircraft Hand and arm signals and entering/exiting rotor arc.

Prerequisite: ACAD 0201

Reference:
A1-H53CE-MRC-200
A1-H53CE-GAI-000
A1-H53BE-NFM-000

LAB-0302	2.5	*	B,CI,FRSI	*	*	*	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 0202

Reference:
A1-H53CE-MRC-200

LAB-0303 1.5 * B,CI,FRSI * * * 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 0203

Reference:
A1-H53CE-MRC-200

LAB-0304 1.5 * B,CI,FRSI * * * 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: 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.

CCUI is responsible for knowledge of: landing gear servicing.

Prerequisite: ACAD 0204

Reference:
A1-H53CE-MRC-200

LAB-0305 1.0 * B,CI,FRSI * * * 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 0205

Reference:
A1-H53CE-MRC-200

LAB-0306 2.0 * B,CI,FRSI * * * S/A

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 0206

Reference:
A1-H53CE-MRC-200

LAB-0307 1.5 * B,CI,FRSI * * * S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of the aft main rotor pylon.

Requirement:

Introduce: Inspection of:
Aft main rotor pylon

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

Prerequisite: ACAD 0207

Reference:
A1-H53CE-MRC-200

LAB-0308 1.0 * B,CI,FRSI * * * S/A

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

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

Prerequisite: ACAD 0208

Reference:
A1-H53CE-MRC-200

LAB-0309 1.5 * B,CI,FRSI * * * S/A

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 0209

Reference:
A1-H53CE-MRC-200

LAB-0310 1.0 * B,CI,FRSI * * * 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 0210

Reference:
A1-H53CE-MRC-200

LAB-0311 1.5 * B,CI,FRSI * * * 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 0211

Reference:
A1-H53CE-MRC-200

LAB-0312 1.5 * B,CI,FRSI * * * 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: CCUI is responsible for performing procedures required to inspect: 2nd stage hydraulic system, utility hydraulic system, and engine start hydraulic components.

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

Prerequisite: ACAD 0212

Reference:
A1-H53CE-MRC-200

LAB-0313 1.5 * B,CI,FRSI * * * S/A

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 0213

Reference:
A1-H53CE-MRC-200

LAB-0314 1.5 * B,CI,FRSI * * * S/A

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

Requirement: Introduce inspection of:
Main rotor head
Main rotor blades

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

Prerequisite: ACAD 0214

Reference:
A1-H53CE-MRC-200

LAB-0315 1.5 * B,CI,FRSI * * * S/A

Goal: Provide the CCUI with the fundamental skills required to perform a daily inspection of mission systems and ability to configure aircraft for assigned missions.

Requirement:

Introduce: Inspection of:
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: 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.

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.

CCUI is responsible for ensuring proper aircraft configuration.

Prerequisite: ACAD 0215

Reference:
A1-H53CE-MRC-200

LAB-0316 1.5 * B,CI,FRSI * * * 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 0216

External Syllabus Support: Fuel sample trainer

Reference:
A1-H53CE-MRC-100

LAB-0317 1.0 * B,CI,FRIS * * * S/A

Goal: Provide the CCUI with the fundamental skills required to refuel

and/or defuel the aircraft.

Requirement:

Introduce:
Refuel/Defuel truck considerations
Safety precautions, fire bottle positioning, and fuel spills
Hand and arm signals
APP operations

Performance Standard: CCUI is responsible for recognizing hazards and taking appropriate actions for: refuel/defuel truck considerations, safety precautions, fire bottle and fuel spills

CCUI is responsible for performing: hand and arm signals, and APP operations.

Prerequisite: ACAD 0217

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

LAB-0318 1.0 * B,CI,FRIS * * * 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: CCUI is responsible for: following applicable safety precautions.

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-0319 1.0 * B,CI,FRSI * * * S/A

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

Requirement:

Introduce:
Collective and cyclic control functions

AFCS operation

Performance Standard: CCUI is responsible for performing: collective and cyclic control functions, and AFCS operation.

Prerequisite: ACAD 0219

Reference:
A1-H53CE-MRC-200
A1-H53CE-GAI-000
A1-H53BE-NFM-000

LAB-0321 4.0 * B,CI,FRSI * * * 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 0221

Reference:
COMNAVFORINST 4790.2
A1-H53CE-MRC-200

LAB-0322 1.0 * B,CI,FRSI * * * S/A

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

Requirement:

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

Practice:
Performing Turnaround inspection

Performance Standard: CCUI is responsible for: displaying knowledge of Plane caption program, following appropriate safety practices, and performing turnaround inspection

Prerequisites: ACAD 0222

External Syllabus Support: Fuel sample trainer

Reference:

COMNAVFORINST 4790.2
A1-H53CE-MRC-100

LAB-0323 1.0 * B,CI,FRSI * * * S/A

Goal: Provide the CCUI with the fundamental skills required for preflight/post flight inspection and proper wear of required flight equipment.

Requirement:

Introduce:
Preflight inspection of required gear
Post-flight inspection of required gear
Proper wear of flight equipment

Performance Standard: CCUI is responsible for: preflight inspection of required gear, post-flight inspection of required gear and proper wear of flight equipment.

Prerequisite: ACAD 0223

Reference:
A1-H53BE-NFM-000

LAB-0324 1.5 * B,CI,FRSI * * * 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 0224 and LAB 0323

Reference:
A1-H53BE-NFM-000

3.8.4 Instructor Events

3.8.4.1 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.

3.8.4.2 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.

3.8.4.3 Crew Requirement: CCI/CCIUT

FRSI-0500 2.0 * CI,FRSI * * * CLSRM

Goal: Provide Crew Chief Instructor Under Training (CCIUT) with the skills required to conduct a Computer Aided Instruction (CAI) period of instruction.

Requirement:

Introduce:
Conducting CAI

Performance Standard: CCIUT is responsible for: properly conducting a CAI period of instruction.

Prerequisite: Successfully complete Formal School Instructor Course (FSIC) and Basic Instructor Training Course (BITC).

External Syllabus Support: Electronic classroom

Reference:
HMT-302 Marine Enlisted Aircrew Training SOP

FRSI-0501 2.0 * CI,FRSI * * * S/A

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: INST 0500

External Syllabus Support: Electronic classroom

Reference:
HMT-302 Marine Enlisted Aircrew Training SOP

FRSI-0502 2.0 * CI,FRSI * * * CLSRM or S/A

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: INST 0501

External Syllabus Support: Electronic classroom

Reference:
HMT-302 Marine Enlisted Aircrew Training SOP

FRSI-0503 2.0 * CI,FRSI * * * CLSRM or S/A

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: INST 0502

External Syllabus Support: Electronic classroom

Reference:
HMT-302 Marine Enlisted Aircrew Training SOP

3.8.5 Evaluation Events

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

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

3.8.5.3 Crew Requirement: CCUI or CC

EVAL-0600 2.0 * B,CI,FRSI * * * A

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,CI,FRSI * * * A

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

3.9 CORE SKILL INTRODUCTION PHASE (1000) FLIGHT SYLLABUS

3.9.1 General

3.9.1.1 Prior to starting 1000 phase, aircrew must complete: flight physical, Naval Aviation Water Survival Training Program (NAWSTP) and Naval Aviation Physiology Training Program (NAPTP).

3.9.1.2 Stages

1100-FAM
1200-NFAM
1300-INT
1400-N/A
1500-FORM
1600-CAL
1700-EXT
1800-TERF
1900-REV/CSIX

3.9.1.3 Familiarization

3.9.1.4 Purpose: To familiarize Aircrew with CH-53 operations and emergency procedures.

3.9.1.5 General: Aircrew (CCUI) may fly these events in conjunction with the Pilot syllabus. Instructors (CCI) shall be AGI for FAM-1113.

3.9.1.6 Crew Requirement: CCI/CCUI

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

SFAM-1100	1.5	*	B	D	*	A/S	1 CH-53

Goal: Practice aircrew duties part 1

Requirement:

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

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: FAM-1100

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

Goal: Introduce Emergency Procedures

Requirement:

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:

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/S	1 CH-53

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

Requirement:

Discuss:
- Aircrew duties
- Performing emergency procedures
- Emergency procedure safety

Review:
- Aircrew duties
- Engine emergency procedures
- 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

3.9.2 Night Familiarization

3.9.2.1 Purpose: To familiarize Aircrew with CH-53 operations at night.

3.9.2.2 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.

3.9.2.3 Crew Requirement: CCI/CCUI

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

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

Goal: Introduce Night Systems (NS)

Requirement:

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: NFAM-1200 and 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:

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

3.9.3 Internal Loads

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

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

3.9.3.3 Crew Requirement: CCI/CCUI

3.9.3.4 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

Goal: Introduce Cabin/Cargo Configuration/Load Planning

Requirement:

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

Prerequisite: FAM-1104

External Syllabus Support: Aircrew Cabin Procedures Trainer

INT-1301 1.5 * B (N) * A/S 1 CH-53

Goal: Introduce Internal Passengers/Cargo Operations

Requirement:

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

Prerequisite: INT-1300

External Syllabus Support: Aircrew Cabin Procedures Trainer

3.9.4 Formation

3.9.4.1 Purpose: To introduce aircrew duties associated with formation flight.

3.9.4.2 General: Aircrew (CCUI) may fly these events in conjunction with the pilot syllabus. Instructors (CCI) shall be an NSI for FORM-1501.

3.9.4.3 Crew Requirement: CCI/CCUI

FORM-1500	2.0	*	B	D	*	A	2	CH-53

Goal: Introduce day Formation Flight

Requirement:

Discuss:
Crew Resource Management (CRM)
Formation flight procedures

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

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

Prerequisite: FAM-1103

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

Goal: Introduce Night Systems (NS) Formation Flight

Requirement:

Discuss:
Crew Resource Management (CRM)
Formation flight procedures

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

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

Prerequisite: NFAM-1201 and FORM-1500

3.9.5 Confined Area Landings

3.9.5.1 Purpose: To introduce aircrew duties associated with Confined Area Landings (CAL).

3.9.5.2 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.

3.9.5.3 Crew Requirement: CCI/CCUI

CAL-1600	1.5	*	B	D	*	A/S	1 CH-53

Goal: Introduce Confined Area Landings (CALs)

Requirement:

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

Prerequisite: FAM-1104

External Syllabus Support: Aircrew Procedures Trainer

CAL-1601	1.5	*	B	D	*	A	2 CH-53

Goal: Introduce Section Confined Area Landings (CALs)

Requirement:

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

Prerequisite: CAL-1600

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

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

Requirement:

Discuss:
Crew Resource Management (CRM)

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

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

Prerequisite: NFAM-1201 and CAL-1601

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

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

Requirement:

Discuss:
Crew Resource Management (CRM)

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

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

Prerequisite: CAL-1602

3.9.6 External Loads

3.9.6.1 Purpose: To introduce aircrew duties associated with external cargo operations.

3.9.6.2 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.

3.9.6.3 Crew Requirement: CCI/CCUI

EXT-1700	1.5	*	B	D	*	S	1 CH-53

Goal: Introduce Single-Point External Operations Part 1

Requirement:

Discuss:
- Commands called
- 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: Per CH-53 NATOPS and FRS Maneuver Description Guide.

Prerequisite: CAL-1600

External Syllabus Support: Aircrew External Procedures Trainer

EXT-1701	1.5	*	B	D	*	S	1 CH-53

Goal: Introduce Dual-Point External Operations

Requirement:

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
Commands called

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

Prerequisite: EXT-1700

External Syllabus Support: Aircrew External Procedures Trainer

EXT-1703 1.5 * B D * A 1 CH-53

Goal: Practice Single-Point External Operations Part 2

Requirement:

Discuss:
Crew Resource Management (CRM)
External cargo equipment checks
External cargo jettison

Practice:
Crew Resource Management (CRM)
Operational Risk Management (ORM)
External cargo jettison
Cargo systems emergency procedure
Positive communication calls
External transport of cargo
External cargo load release (single-point) procedures

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

Prerequisite: CAL-1601 and EXT-1702

External Syllabus Support: Aircrew External Procedures Trainer

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

Goal: Review Dual-Point External Operations Part 3

Requirement:

Discuss:
External operation safety
Preflight procedures for each type of external
Cargo equipment safety
External cargo transport dual-point suspension pre-flight
Dual-point suspension pre-takeoff
Operation of external cargo equipment safety
Commands called

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

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

Prerequisite: EXT-1703

EXT-1705 1.5 * B NS * A 1 CH-53

Goal: Introduce Night Systems Single-Point External Operations

Requirement:

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

Prerequisite: CAL-1603 and EXT-1704

EXT-1706 1.5 * B NS * A 1 CH-53

Goal: Introduce Night Systems (NS) Dual-Point External Operations

Requirement:

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

Prerequisite: EXT-1705

3.9.7 Terrain Flight

3.9.7.1 Purpose: To introduce aircrew duties associated with terrain flight.

3.9.7.2 General: Aircrew (CCUI) may fly these events in conjunction with the terrain flight stage of the pilot syllabus. Instructors (CCI) shall be a TERFI.

3.9.7.3 Crew Requirement: CCI/CCUI

TERF-1801 1.5 * B D * A 1 CH-53

Goal: Practice Terrain Flight (TERF)

Requirement:

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: Per CH-53 NATOPS and FRS Maneuver Description Guide

Prerequisite: CAL-1600

3.9.8 Review and Core Skill Introduction Evaluation

3.9.8.1 Purpose: To demonstrate proficiency in performing aircrew duties.

3.9.8.2 General:

3.9.8.2.1 Aircrew (CCUI) shall complete a CH-53 NATOPS Flight Manual Open and Closed Book evaluation prior to performing this stage of flight.

3.9.8.2.2 Upon completion of this stage of flight, the aircrew will be NATOPS qualified as Crew Chief (CC) in appropriate T/M/S.

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

3.9.8.3 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

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

Prerequisite: Completion of all applicable 1000 level flight events

External Syllabus Support: Aircrew Emergency Procedures Trainer

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

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

Requirement:

Discuss:
Aircrew duties

Review:
Aircrew duties

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

Prerequisite: REV-1900

3.10 CORE SKILL PHASE (2000)

3.10.1 Purpose: To introduce and develop proficiency in the execution of Core Skills required as Crew Chief/Aerial 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.

3.10.1.1 General:

3.10.1.2 A Crew Chief (CC) will no longer be referred to as a Crew Chief Under Instruction (CCUI) upon graduation for HMHT-302 as the individual is a designated Naval Aircrewman per OPNAVIST 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 perquisites. This individual may fulfill either the "CC" or the "AO" portion of the crew requirement.

3.10.1.3 An Aerial Observer Under Instruction (AOUI) is an individual that has been approved by a unit Commanding Officer to begin the AOUI 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.

3.10.1.4 An Aerial Observer (AO) is an individual that has completed the prescribed AOUI 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 "AO" portion of the crew requirement for any event for which they are eligible per the event prerequisites.

3.10.1.5 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.

3.10.1.6 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, LLL-2930. Aircrew shall fly all NS events in the NSQ LLL syllabi under ambient light conditions of below .0022 LUX.

3.10.1.7 Stages

2100-Internal Loads (INT) & Formation (FORM)
2200-Confined Area Landings (CAL)
2300-Terrain Flight (TERF)
2400-Externals (EXT)
2500-Ground Threat Reaction (GTR)
2700-Field Carrier Landing Practice (FCLP)
2800-Aerial Gunnery (AG)
2900-Tactics (TAC)
2X2X-NS HLL (HLL) (Contained within other stages)
2X3X-NS LLL (LLL) (Contained within other stages)

3.10.1.8 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 day or night (during HLL or LLL conditions) unless otherwise specified

3.10.1.9

Abbreviation	Meaning
A	Aircraft
B	Basic Program of Instruction
C	Conversion Program of Instruction
M	Maintain Program of Instruction
R	Refresher Program of Instruction
T	Transition Program of Instruction
S	Simulated event
GAU-21	GAU-21 .50 caliber machine gun
MWPC	Medium Window Pintle Connection
RMWS	Ramp Mounted Weapon System
STATIC A/C	Static aircraft not required to fly for event
S/P	Single Point external system
D/P	Dual Point external system

3.10.1.10 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 student. The student is

	responsible for knowledge of the procedures prior to the demonstration of a required maneuver.
Introduce	A first time explanation of systems, procedures, or maneuvers during the brief, in flight, or post flight. Student is responsible for knowledge of 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 knowledge of a procedure or proficiency of a maneuver by the student.
Evaluate	Any flight designed to evaluate aircrew standardization that does not fit another category.
E-Coded	This term means an event evaluation form is required each time the event is logged. Requires evaluation by a certified standardization instructor (NATOPS I, WTI, INST Evaluator etc.)

3.10.1.11 Ground/Academic Training

3.10.1.12 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.

3.10.1.13 Upon completion, the CC/AOUI/AO 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 beginning on Pg 3-183 of this document.

3.10.1.14 2000-5000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:

https://www.intranet.tecom.usmc.mil/sites/mawts1/default.aspx

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

http://www.mawts1.usmc.smil.mil/

T&R CODE	ACADEMIC SYLLABUS
	CORE SKILL PHASE (2000)
ACAD-2004	(S) AAR 47 / ALE 47
ACAD-2012	(S) APR-39
ACAD-2019	(S) AAQ-24
ACAD-2050	(U) EA Tactical aircrew considerations and responsibility (TACR)
ACAD-2051	(U) EA Terrain flight
ACAD-2052	(U) EA Night vision training
ACAD-2053	(U) EA Fundamentals of aerial gunnery
ACAD-2055	(U) EA GAU-21 .50 cal machine gun
ACAD-2056	(U) EA Laser aiming devices
ACAD-2057	(U) EA Laser bore sighting

ACAD-2058	(U) EA Basic principles of escort operations

3.10.1.16 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
Flight: CSIX-1901

3.10.1.17 Internal Loads (INT)

3.10.1.18 Purpose: To introduce and refine aircrew duties in loading, securing, unloading passengers, cargo and vehicles.

3.10.8.19 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.

INT-2100	1.5	*	B,R	(N)	*	A	1	Static CH-53E

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.

Introduce:
- CC vs. AO responsibilities during cargo operations
- CRM and crew coordination during cargo operations
- Aircraft danger zones
- Aircraft limitations
- Cabin configuration
- CG limitations and considerations
- Cargo loading procedures
- Cargo winch operation w/ snatch blocks
- Various types of support equipment
- Forklift procedures
- J-Bar usage
- Palletized vs. Non-palletized cargo
- Cargo securing procedures
- Safety precautions transporting various cargo
- Deceased casualties
- Petroleum, oxygen, lubricants (POL)
- Liquid oxygen (LOX)
- Pyrotechnics
- Class V cargo (ammunition)
- Cargo unloading procedures
- 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
- Terrain suitability for cargo/vehicle on-load/off-load

NVG considerations
Cabin/cargo lighting considerations
Safety precautions during cargo operations
Crew Coordination
ICS procedures

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

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

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

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.

Introduce:
CC vs. AO responsibilities during passenger embark/ debark
CRM and crew coordination during passenger operations
A/C danger zones
Cabin configuration
Litter considerations
NFM-900 Passenger briefing guide
Crew Coordination/ CRM
Hand and arm signals
Communication with passengers
ICS station for AFC or stick leader
Passenger embarking procedures
Passenger securing procedures
Passenger debarking procedures
ICS procedures during embark/debark
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
Problems encountered during embark, securing and debark
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-2050, (ACAD-2052 if conducted at night)

INT-2105	1.5	365	B,R,M	(N)	*	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.

Discuss:
- CC vs. AO responsibilities during cargo operations
- CRM and crew coordination during cargo operations
- Aircraft danger zones
- Aircraft limitations
- Cabin configuration
- CG limitations and considerations
- Cargo loading procedures
- Cargo winch operation w/snatch blocks
- Various types of support equipment
- Forklift procedures
- J-Bar usage
- Palletized vs. Non-palletized cargo
- Cargo securing procedures
- Safety precautions transporting various cargo
- Deceased casualties
- Petroleum, oxygen, lubricants (POL)
- Liquid oxygen (LOX)
- Pyrotechnics
- Class V cargo (ammunition)
- Cargo unloading procedures
- 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
- Terrain suitability for cargo/vehicle on-load/off-load
- NVG considerations
- Cabin/cargo lighting considerations
- Safety precautions during cargo operations
- ICS procedures

Practice:
- CC vs. AO responsibilities during cargo operations
- CRM and crew coordination during cargo operations
- Cabin configuration
- Cargo loading procedures
- Cargo winch operation w/snatch blocks (if applicable)
- Support equipment utilization (if applicable)
- Cargo securing procedures
- Cargo unloading procedures

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

External Syllabus Support: Applicable cargo and/or vehicles

INT-2106	1.5	365	B,R,M	(N)	*	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.

Discuss:
CC vs. AO responsibilities during passenger embark/debark
CRM and crew coordination during passenger operations
A/C danger zones
Cabin configuration
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
ICS procedures during embark/debark
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
Problems encountered during embark, securing and debark
Emergency passenger egress
Crew responsibilities for flight over water with passengers
Abandon/ditching aircraft
Situational awareness
Communication

ICS procedures/failure
Crew coordination/CRM
Aircraft emergencies
Cabin security

Practice:
CC vs. AO responsibilities during passenger embark/debark
CRM and crew coordination during passenger operations
Cabin configuration
NFM-900 Passenger briefing guide
Hand and arm signals
Communication with passengers
Passenger embarking procedures
Passenger securing procedures
Passenger debarking procedures
ICS procedures during embark/debark
Passenger accountability
Scan pattern with passengers
Ramp/flipper position during passenger embark/debark
Cabin security

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

3.10.2 Formation (FORM)

3.10.2.1 Purpose: To introduce and practice aircrew responsibilities during formation flight and introduce responsibilities of tactical formation flight during the day.

3.10.2.2 Crew Requirement: P/P/CC/AO

3.10.2.3 Ground/Academic Training: All self paced readings and lectures pertaining to this stage shall be completed prior to flight initiation. Utilize academic courseware as outlined in the MAWTS-1 Course Catalog.

FORM-2110	1.5	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:
Basic tactical formations
Closure rate
Wingman considerations
Wingman updates using standard terminology
“Visual” vs. “Blind”
Inadvertent Instrument Meteorological Conditions (IIMC)
Standard terminology
“Popeye”

"On board"
"Holding hands"
Comfort level
Emergency procedures
Combat cruise vs. Combat spread
Communication vs. No communication lead change
Tactical formation maneuvering
Tactical vs. Formation lead change
Tac turn
Center turn
In place turn
Split turn
Cross turn
Break turn
Dig and Pinch
Cover
Resume

Practice:
CC vs. AO responsibilities during formation flight
CRM and crew coordination during formation flight
Cabin configuration
Cabin security
Basic tactical formation maneuvering
Crew coordination/CRM
Situational awareness
Communication
Standard terminology
Identifying closure rate to wingman
ICS procedures

Performance Standards: Conduct aircrew duties and demonstrate proficient knowledge of aircrew considerations during tactical formation flight IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Prerequisite: ACAD-2050

3.10.3 Confined/Mountainous Area Landings (CAL/MAL)

3.10.3.1 Purpose: To introduce and practice aircrew responsibilities while conducting CAL/MAL operations with single ship and multiple aircraft during the day.

3.10.3.2 General: Aircrew may find a description of these maneuvers in the CH-53 NATOPS and NTTP 3-22.3-CH-53.

3.10.3.3 Crew Requirement: P/P/CC for CAL-2210, P/P/CC/AO for CAL-2211

3.10.3.4 Ground/Academic Training: The MAWTS-1 CH-53 Course Catalog contains all self-paced readings and lectures pertaining to this stage which shall be completed as outlined in the MAWTS-1 Course Catalog.

CAL-2210	1.5	365	B,R,M	D	*	A	1 CH-53

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:
- CALs
- Pattern terminology, upwind, downwind, abeam, final
- Airspeed/altitude during landing approach
- Desert landing profile
- Effects of wind
- Tactical approaches
- Closure rate
- Lookout doctrine
- Scan pattern vs. sight fixation
- Aircraft/Obstacle clearance
- Tail rotor clearance
- Standard Terminology
- Landing on a slope
- A/C landing gear brake limitations
- Rotor wash effect on trees, bushes, tall grass, etc…
- Loose objects/blowing debris
- Terrain suitability
- Brown out/white out procedures
- Drift correction/Heading control
- Aircraft lighting
- Wave off procedures

Practice:
- CC vs. AO responsibilities during CAL/MAL operations
- CRM and crew coordination during CAL/MAL operations
- Cabin configuration
- Communication
- ICS procedure
- Tactical approaches
- Identifying closure rate to ground during landing
- Situational awareness
- Lookout doctrine
- Scan pattern
- Aircraft/Obstacle clearance
- Tail rotor clearance
- Identifying terrain suitability
- Standard Terminology
- Drift correction/Heading control
- Wave off procedures
- Cabin security

Performance Standards: Conduct CAL/MAL operations and considerations IAW above listed items and the CH-53 NATOPS and NTTP 3-22.3-53. Perform aircrew duties during tactical CAL/MAL operations IAW the above listed items and IAW CH-53 NATOPS and NTTP 3-22.3-53. Conduct a minimum of 5 confined area landings.

Prerequisite: ACAD-2050

Range Requirements: CAL/MAL site

CAL-2211	1.5	365	B,R,M	D	*	A	2 CH-53

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:
- Wingman situational awareness
- Wingman terminology
- Wingman update
- Wingman crossover
- Section takeoffs
- Section approaches
- Section landings to a CAL/MAL site

Discuss:
- Section CALs
- Pattern terminology, upwind, downwind, abeam, final
- Airspeed/altitude during landing approach
- Desert landing profile
- Effects of wind
- Tactical approaches
- Closure rate
- Lookout doctrine
- Scan pattern vs. sight fixation
- Aircraft/Obstacle clearance
- Tail rotor clearance
- Standard Terminology
- Terrain suitability
- Landing on a slope
- A/C landing gear brake limitations
- Rotor wash effect on trees, bushes, tall grass, etc…
- Loose objects/blowing debris
- Brown out/white out procedures
- Drift correction/Heading control
- Aircraft lighting
- Wave off procedures
- Situational awareness
- Communication
- Identifying closure rate to ground during landing
- ICS procedures/failure
- Crew coordination/CRM
- Aircraft emergencies
- Cabin security

Practice:
- CC vs. AO responsibilities during section CAL/MAL operations
- CRM and crew coordination during section CAL/MAL operations
- Cabin configuration
- Communication
- ICS procedure
- Wingman situational awareness
- Wingman terminology
- Wingman update
- Tactical approaches
- Identifying closure rate to ground during landing
- Situational awareness
- Lookout doctrine
- Scan pattern
- Aircraft/Obstacle clearance

Tail rotor clearance
Identifying terrain suitability
Standard Terminology
Drift correction/Heading control
Wave off procedures
Cabin security

Performance Standards: Conduct CAL/MAL operations and considerations within a section 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 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: FORM-2110, CAL-2210

Range Requirements: CAL/MAL site

3.10.4 Terrain Flight (TERF)

3.10.4.1 Purpose: To enhance aircrew responsibilities and lookout doctrine with TERF maneuvers/navigation and introduce section maneuvering in the day TERF environment.

3.10.4.2 General: Currency restrictions per T&R Program Manual. Crew Chiefs will be considered TERF qualified at the completion of TERF-2311. AOUI will complete the TERF syllabus prior to being designated an AO. The AOUI shall not be considered TERF qualified until after they have completed the NATOPS and CRM evaluation flight and have been designated an AO.

3.10.4.3 Crew Requirement: P/P/CC/AO

3.10.4.4 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.

TERF-2310	1.5	365	B,R,M	D	*	A	1 CH-53

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:
Low level flight
Contour flight
Nap of the Earth (NOE)
Crew comfort levels
Cockpit Scan
Aircraft limitations
Operational power checks
Weather Minimums
TERF Currency
Lookout doctrine
Navigational assistance
Terrain Flight Considerations

Terrain Flight Maneuvers
Bunt, Roll, TERF turn, Quick stop, Mask/Unmask
Safety considerations, Hazards
Standard terminology
Obstacle clearance

Practice:
CC vs. AO responsibilities during TERF
CRM and crew coordination during TERF
Cabin configuration
Situational awareness
Communication
ICS procedures
Crew comfort levels
Cockpit Scan
Lookout doctrine
Navigational assistance
Terrain Flight Maneuvers
Bunt, Roll, TERF turn, Quick stop, Mask/Unmask
Standard terminology
Obstacle clearance
Identifying closure rate to terrain
Cabin security

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: Approved TERF maneuver area/route

TERF-2311	1.5	365	B,R,M	D	E	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:
Tactical section maneuvering within the TERF environment

Discuss:
Low level flight
Contour flight
Crew comfort levels
Crew coordination/CRM
Standard terminology
Operational Power Checks
Lookout doctrine
Cockpit Scan
Cabin security
Aircraft limitations
Weather Minimums
TERF Currency
Lookout Doctrine

Terrain Flight Considerations
Terrain Flight Maneuvers
Bunt, Roll, TERF turn, Quick stop, Mask/Unmask
Safety considerations, Hazards
ICS procedures/Failure
Obstacle clearance
Emergency procedures
Closure rate
Wingman terminology
Wingman situational awareness
Wingman Crossover

Practice:
CC vs. AO responsibilities during section TERF
CRM and crew coordination during section TERF
Cabin configuration
Situational awareness
Crew coordination/CRM
Communication
ICS procedures
Crew comfort levels
Cockpit Scan
Lookout doctrine
Navigational assistance
Terrain Flight Maneuvers
Bunt, Roll, TERF turn, Quick stop, Mask/Unmask
Standard terminology
Obstacle clearance
Identifying closure rate to terrain
Identifying closure rate to wingman
Wingman terminology
Wingman situational awareness
Wingman Crossover
Cabin security

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: Approved TERF maneuver area/route.

3.10.5 External Operations (EXT)

3.10.5.1 Purpose:

3.10.5.2 To develop skills necessary to conduct external operations in confined areas.

3.10.5.3 Aerial Observers shall make the calls from the external hatch door while over the external load in order to receive attainment/proficiency for the event.

3.10.5.4 Crew Requirement: P/P/CC/AO

3.10.5.5 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.

EXT-2410 1.5 365 B,R,M 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:
- Single point cargo hook system
- Pre-flight / hook checks
- Associated caution/advisory lights
- Cargo hook control panel/switches'
- Aircrew portable pendant control
- Cargo hook emergency release
- Single point cargo auto-release
- A/O setup of cabin while Crew Chief inspects the load
- Cabin configuration/inspection prior to 1st external lift
- Gunner's belt attachment location
- Operational Power Checks
- External procedures
- Safety precautions
- Brown out/white out procedures
- Movement in the cabin with external hatch open
- Multiservice Helicopter Sling Load Manual
- Type of sling utilized
- Load rigging/chain link count inspection
- Weight limitation for external load (min & max)
- Alternate pick-up procedures
- HST brief per NTTP 3-22.5
- HST considerations
- 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
- Anticipation of aircraft/pilot tendencies
- Drift identification/correction over the external load
- Centering of the aircraft over the load prior to pick up
- 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
- Flight with single point external loads
- Load stability in flight
- Airspeed/Altitude on approach path with EXT cargo
- Terrain suitability for external drop off
- ICS failure while in the single point external hatch
- Aircraft emergency with external load
- Emergency external jettison procedure
- Standard external load vs. heavy lift load
- A/O perform aircraft clearance during approach/takeoff/in zone
- A/O monitors T5 and Ng gauges during pickup
- A/O safety observer while over the load
- A/O perform aircraft clearance and calls during landing

Practice:

CC vs. AO responsibilities during S/P EXT operations
CRM and crew coordination during S/P EXT operations
Cabin configuration
ICS procedures/failure
Situational awareness
Communication
Pre-flight / hook checks
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
Load rigging/chain link count inspection
HST brief per NTTP 3-22.5
Hand and arm signals
Obstacle clearance on ingress/departure
Standard terminology
Hook placement in relation to HST personnel
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
Safe pick up/drop off vs. perfect pick up/drop off
Flight with single point external loads
Identifying airspeed/Altitude on approach path with EXT cargo
Identifying terrain suitability for external drop off
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
Cabin security

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: Approved CAL/MAL site

External syllabus support: HST, certified single point load

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

Goal: Introduce and practice dual point external operations.

Requirement:

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

Introduce:
Dual point cargo hook system
Pre-flight/hook checks
Associated caution/advisory lights
Cargo hook control panel
2 point flight vs. load unload

Discuss:
Aircrew portable pendant control

Cargo hook emergency release handle
Cargo hook control panel/switches
Pre-flight / hook checks
Associated caution/advisory lights
Cargo hook control panel/switches'
Aircrew portable pendant control
Cargo hook emergency release
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
External procedures
Safety precautions
Brown out/white out procedures
Movement in the cabin with external hatch open
Multiservice Helicopter Sling Load Manual
Type of sling utilized
Load rigging/chain link count inspection
Weight limitation for external load (min & max)
Alternate pick-up procedures
HST brief per NTTP 3-22.5
HST considerations
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
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
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
Flight with single point external loads
Load stability in flight
Airspeed/Altitude on approach path with EXT cargo
Terrain suitability for external drop off
ICS failure while in the single point external hatch
Aircraft emergency with external load
Emergency external jettison procedure
Standard external load vs. heavy lift load
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
A/O monitor 2pt flight and 2pt unarmed light
A/O release of forward dual point on drop-off
Safety observer while over the load

Practice:
CC vs. AO responsibilities during D/P EXT operations
CRM and crew coordination during D/P EXT operations
Cabin configuration
ICS procedures/failure
Situational awareness
Communication
Pre-flight/hook checks

A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
Load rigging/chain link count inspection
HST brief per NTTP 3-22.5
Hand and arm signals
Obstacle clearance on ingress/departure
Standard terminology
Hook placement in relation to HST personnel
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
Safe pick up/drop off vs. perfect pick up/drop off
Flight with single point external loads
Identifying airspeed/Altitude on approach path with EXT cargo
Identifying terrain suitability for external drop off
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
A/O monitor 2pt flight and 2pt unarmed light
A/O release of forward dual point on drop-off
Cabin security

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: Approved CAL/MAL site

External syllabus support: HST, certified dual point load

EXT-2420	1.5	180	B,R,M	NS	*	A	1 CH-53

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 external operations
Aircraft lighting considerations
Field of View (FOV) vs. Field of Regard (FOR)
Scan pattern/Sight fixation
Depth perception vs. Distance estimation
Closure rate
NVG misperceptions and illusions
Effects of shadows
Crows foot/NATO Y setup/usage
Use of chem. lights (S/P pendant, slings, load, HST personnel)

Discuss:

Single point cargo hook system
Pre-flight/hook checks
Associated caution/advisory lights
Cargo hook control panel/switches'
Aircrew portable pendant control
Cargo hook emergency release
Single point cargo auto-release
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
External procedures
Safety precautions
Brown out/white out procedures
Movement in the cabin with external hatch open
Multiservice Helicopter Sling Load Manual
Type of sling utilized
Load rigging/chain link count inspection
Weight limitation for external load (min & max)
Alternate pick-up procedures
HST brief per NTTP 3-22.5
HST considerations
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
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
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
Flight with single point external loads
Load stability in flight
Airspeed/Altitude on approach path with EXT cargo
Terrain suitability for external drop off
ICS failure while in the single point external hatch
Aircraft emergency with external load
Emergency external jettison procedure
Standard external load vs. heavy lift load
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing

Practice:
CC vs. AO responsibilities during HLL S/P EXT operations
CRM and crew coordination during HLL D/P EXT operations
Cabin configuration
ICS procedures/failure
Situational awareness
Communication
Pre-flight/hook checks
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location

Operational Power Checks
Load rigging/chain link count inspection
HST brief per NTTP 3-22.5
Hand and arm signals
Obstacle clearance on ingress/departure
Standard terminology
Hook placement in relation to HST personnel
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
Safe pick up/drop off vs. perfect pick up/drop off
Flight with single point external loads
Identifying airspeed/Altitude on approach path with EXT cargo
Identifying terrain suitability for external drop off
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
Cabin security

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: Approved CAL/MAL site

External Syllabus Support: HST, certified single point load

EXT-2421	1.5	180	B,R,M	NS	*	A	1 CH-53E

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.

Introduce:
HLL NS considerations as applicable to external operations
Aircraft lighting considerations
Field of View (FOV) vs. Field of Regard (FOR)
Scan pattern/Sight fixation
Depth perception vs. Distance estimation
Closure rate
NVG misperceptions and illusions
Effects of shadows
Crows foot/NATO Y setup/usage
Use of chem. lights (S/P pendant, slings, load, HST personnel)

Discuss:
Aircrew portable pendant control
Cargo hook emergency release handle
Cargo hook control panel/switches
Pre-flight/hook checks
Associated caution/advisory lights
Cargo hook control panel/switches’

Aircrew portable pendant control
Cargo hook emergency release
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
External procedures
Safety precautions
Brown out/white out procedures
Movement in the cabin with external hatch open
Multiservice Helicopter Sling Load Manual
Type of sling utilized
Load rigging/chain link count inspection
Weight limitation for external load (min & max)
Alternate pick-up procedures
HST brief per NTTP 3-22.5
HST considerations
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
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
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
Flight with single point external loads
Load stability in flight
Airspeed/Altitude on approach path with EXT cargo
Terrain suitability for external drop off
ICS failure while in the single point external hatch
Aircraft emergency with external load
Emergency external jettison procedure
Standard external load vs. heavy lift load
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
A/O monitor 2pt flight and 2pt unarmed light
A/O release of forward dual point on drop-off
Safety observer while over the load

Practice:
CC vs. AO responsibilities during HLL D/P EXT operations
CRM and crew coordination during HLL D/P EXT operations
Cabin configuration
ICS procedures/failure
Situational awareness
Communication
Pre-flight/hook checks
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
Load rigging/chain link count inspection

HST brief per NTTP 3-22.5
Hand and arm signals
Obstacle clearance on ingress/departure
Standard terminology
Hook placement in relation to HST personnel
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
Safe pick up/drop off vs. perfect pick up/drop off
Flight with single point external loads
Identifying airspeed/Altitude on approach path with EXT cargo
Identifying terrain suitability for external drop off
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
A/O monitor 2pt flight and 2pt unarmed light
A/O release of forward dual point on drop-off
Cabin security

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: Approved CAL/MAL site

External Syllabus Support: HST, certified dual point load

EXT-2430	1.5	180	B,R,M	NS	*	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) POI.

Introduce:
LLL NS considerations as applicable to external operations:
Visual Acuity
Depth perception vs. Distance estimation
Optical Flow
Closure rate
Scintillation

Discuss:
Aircrew portable pendant control
Cargo hook emergency release handle
Cargo hook control panel/switches
Pre-flight/hook checks
Associated caution/advisory lights
Cargo hook control panel/switches'
Aircrew portable pendant control
Cargo hook emergency release
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift

Gunner's belt attachment location
Operational Power Checks
External procedures
Safety precautions
Brown out/white out procedures
Movement in the cabin with external hatch open
Multiservice Helicopter Sling Load Manual
Type of sling utilized
Load rigging/chain link count inspection
Weight limitation for external load (min & max)
Alternate pick-up procedures
HST brief per NTTP 3-22.5
HST considerations
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
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
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
Flight with single point external loads
Load stability in flight
Airspeed/Altitude on approach path with EXT cargo
Terrain suitability for external drop off
ICS failure while in the single point external hatch
Aircraft emergency with external load
Emergency external jettison procedure
Standard external load vs. heavy lift load
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
A/O monitor 2pt flight and 2pt unarmed light
A/O release of forward dual point on drop-off
Safety observer while over the load

Practice:
CC vs. AO responsibilities during LLL EXT operations
CRM and crew coordination during LLL EXT operations
Cabin configuration
ICS procedures/failure
Situational awareness
Communication
Pre-flight/hook checks
A/O setup of cabin while Crew Chief inspects the load
Cabin configuration/inspection prior to 1st external lift
Gunner's belt attachment location
Operational Power Checks
Load rigging/chain link count inspection
HST brief per NTTP 3-22.5
Hand and arm signals
Obstacle clearance on ingress/departure
Standard terminology

Hook placement in relation to HST personnel
Anticipation of aircraft/pilot tendencies
Drift identification/correction over the external load
Centering of the aircraft over the load prior to pick up
Safe pick up/drop off vs. perfect pick up/drop off
Flight with single point external loads
Identifying airspeed/Altitude on approach path with EXT cargo
Identifying terrain suitability for external drop off
A/O perform aircraft clearance during approach/takeoff/in zone
A/O monitors T5 and Ng gauges during pickup
A/O safety observer while over the load
A/O perform aircraft clearance and calls during landing
A/O monitor 2pt flight and 2pt unarmed light
A/O release of forward dual point on drop-off
Cabin security

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: Approved CAL/MAL site

External Syllabus Support: HST, certified load

3.10.6 Ground Threat Reaction (GTR)

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

3.10.6.2 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.

3.10.6.3 Crew Requirement: P/P/CC/AO

3.10.6.4 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-2540	1.5	365	B,R,M	(NS)	*	A	2 CH-53

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

Introduce:
Types of Non-Radar ground threat (Small arms, HMG, RPG, MANPAD)
Operation of AAR-47, ALE-47, and AAQ-24

IR countermeasures
MAWTS-1 GTR Program Guide
GTR walkthrough
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Evasive maneuvers/threat counter tactics
Rules of engagement
Inter- and intra-aircraft communications
Weapons handling
Weapons lead techniques
Section tactical maneuvers to counter ground-based threat
High, medium, and low altitude tactics
Low altitude emergencies
Tactical maneuvering and ASE employment to counter threat
GTR specific line number training
Standard Terminology

Practice:
CC vs. AO responsibilities during Non-Radar ground threat reaction
CRM and crew coordination during CC vs. AO responsibilities during
CRM and crew coordination during section TERF
Cabin configuration
Cabin configuration
Situational awareness
Communication
Crew coordination/CRM
Tactical formation maneuvering
Operation of AAR-47, ALE-47, and AAQ-24
IR countermeasures
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Evasive maneuvers/threat counter tactics
Section tactical maneuvers to counter ground-based threat
Weapons handling
Weapons lead techniques
High, medium, and low altitude tactics
Tactical maneuvering and ASE employment to counter threat
GTR specific line number training
Standard Terminology
Cabin security

Performance Standards: Conduct helicopter section tactics against a low altitude surface-to-air non-radar threat IAW the MAWTS-1 GTR Program Guide and NTTP 3-22.3-53. 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: Expendable capable range and approved TERF maneuver area/route

External Syllabus Support: Ground-based non-radar threat simulators (e.g., Smokey SAMs, AAR-47 stimulator, handheld pyrotechnics, target lights)

3.10.7 Field Carrier Landing Practice (FCLP)

3.10.7.1 Purpose: To develop skills and CRM required for shipboard operations.

3.10.7.2 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 OPNAVINST 3710.7.

3.10.7.3 Crew Requirement: FCLP-2710: P/P/CC and FCLP-2742: P/P/CC/AO. NS flights require 2 qualified crewmembers unless it is an instructional flight.

3.10.7.4 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-2710	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:
- Shipboard operations
- Air space de-confliction
- Aircraft clearance
- Hand and arm signals
- Shipboard aircraft tie-down
- Shipboard refueling
- Shipboard passenger/cargo loading
- Safety procedures
- Ditching procedures
- Emergency procedures
- Parking brake procedures
- Heading and drift corrections
- Standard Terminology

Practice:
- CC vs. AO responsibilities during shipboard operations
- CRM and crew coordination during shipboard operations
- Cabin configuration
- Situational awareness
- Communication
- Identifying closure rate to ground during landing
- Crew coordination/CRM
- Cabin security

Performance Standards: Perform a minimum of 5 day FCLPs IAW appropriate shipboard NATOPS.

Prerequisite: CAL-2210

External Syllabus Support: FCLP pad

FCLP-2742	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:
- NS considerations for appropriate light level
- Shipboard lighting

Practice:
- CC vs. AO responsibilities during NS shipboard operations
- CRM and crew coordination during NS shipboard operations
- Cabin configuration
- Aircraft clearance
- Hand and arm signals
- Ditching procedures
- Emergency procedures
- Parking brake procedures
- Heading and drift corrections
- Safety procedures
- Standard Terminology
- Situational awareness
- Communication
- Identifying closure rate to ground during landing
- Crew coordination/CRM
- Cabin security

Performance Standards: Conduct a minimum of 5 NS FCLPs IAW appropriate shipboard NATOPS.

Prerequisite: HLL-2220~NS, LLL-2230~LLL, and FCLP-2710

External Syllabus Support: FCLP pad

3.10.8 Aerial Gunnery (AG)

3.10.8.1 Purpose: To demonstrate proficiency in delivering fire on targets of opportunity using the GAU-21 Medium Window Pintle Connection (MWPC) .50 caliber machine gun.

3.10.8.2 General:

(a) Aircrew shall be TERF qualified prior to beginning GAU-21 aerial gunnery stage of training.

(b) All aircrew employing weapons shall have the current A1-H53BE-NFM-900 with all of the interim changes incorporated, on their person.

(c) AG-2843 certifies the aircrew as an aerial gunner with the GAU-21 MWPC. Aircrew may be qualified 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.

(d) 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.

(e) An AGI on the GAU-21 MWPC is required for all day aerial gunnery flight events until aircrew are Aerial Gunnery Qualified.

(f) 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.

(g) Aircrew do not lose their aerial gunnery "Qualification" status due to loss of proficiency (re-fly interval) in an individual event (e.g. AG-2812). Aircrew must re-fly that individual event with another qualified aircrew member in order to regain proficiency in that event.

(h) Aircrew who lose proficiency in all associated aerial gunnery flight events (e.g. AG 2812-2843) automatically lose their "Qualification" status and must complete the Refresher(R) POI with the appropriately designated instructors.

(i) A designated AGI on the GAU-21 MWPC shall only act in the capacity of a AGI when "Qualified" and proficient in aerial gunnery.

(j) Approved laser aiming devices are required and shall be utilized during all night systems (NS) aerial gunnery flight events.

3.10.8.3 Crew Requirement: P/P/CC/AO

3.10.8.4 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-2800	3.0	*	B,R	D	*	*	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

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

AG-2801	2.0	*	B,R	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 MWPC 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,R	D	*	A	1 CH-53

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 MWPC required for all personnel in the Basic (B) and Refresher(R) POI.

Discuss:
A1-H53BE-NFM-900
Local hung ordnance procedures (SOP per STA/MAG/UNIT)
Egress considerations
Conventional Ordnance Deficiency Report (CODR)

Introduce:
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
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.

AG-2812	1.5	180	B,R,M	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 MWPC required for all personnel in the Basic (B) and Refresher(R) POI.

Introduce:
Fire control voice commands
Non-verbal fire control signals

Weapon capabilities
Fields of fire versus sectors of fire
Maximum effective range
Maximum range
Aiming techniques
Ballistic considerations
Normal firing operations
Fire discipline
Firing Limitations
Weapon emergency procedures
Troubleshooting techniques
Egress considerations with weapons installed
Ammunition inspection and preparation
Ammunition uploading
All flight procedures IAW A1-H53BE-NFM-900
Positive control of weapon
Muzzle awareness
Aerial Gunnery flight patterns
300 feet AGL and below for all initial events
1500 feet AGL and below for all proficiency events
Firing during straight and level flight
Firing during a left or right turn in flight
Firing during landing profile
Firing during take off
Firing during a hover
Fields of fire versus sectors of fire

Practice:
CC vs. AO responsibilities during aerial gunnery
CRM and crew coordination during aerial gunnery
Cabin configuration
Use and application of A1-H53BE-NFM-900 weapons checklist
Pre-fire of GAU-21 machine gun
Pre-flight of MWPC
ICS procedures/failure
Standard Terminology
Situational awareness
Communication
Identifying closure rate to ground during landing
Cabin security

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. Point of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target

1000 meter range 70% or more of impacts within a 25 meter diameter of target

<500 meter range 70% or more of impacts within a 15 meter diameter of target

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: Aerial gunnery range with SDZ approved for .50 Caliber for day shooting. Targets should range in size from personnel targets to APC size targets

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 MWPC required for all personnel in the Basic (B) and Refresher(R) POI.

Introduce:
- Wingman no fire areas (NFA)
- Limited sectors of fire
- Fire discipline within a section
- Target hand-off

Practice:
- CC vs. AO responsibilities during section AG
- CRM and crew coordination during section AG
- Cabin configuration
- Fire control voice commands
- Non-verbal fire control signals
- Weapon capabilities
- Fields of fire versus sectors of fire
- Maximum effective range
- Maximum range
- Aiming techniques
- Ballistic considerations
- Normal firing operations
- Firing Limitations
- Weapon emergency procedures
- Troubleshooting techniques
- Egress considerations with weapons installed
- Ammunition inspection and preparation
- Ammunition uploading
- All flight procedures IAW A1-H53BE-NFM-900
- Positive control of weapon
- Muzzle awareness
- Aerial Gunnery flight patterns
- 300 feet AGL and below for all initial events
- 1500 feet AGL and below for all proficiency events
- Firing during straight and level flight
- Firing during a left or right turn in flight
- Firing during landing profile
- Firing during take off
- Firing during a hover
- Fields of fire versus sectors of fire
- Use and application of A1-H53BE-NFM-900 weapons checklist
- Pre-fire of GAU-21 machine gun
- Pre-flight of MWPC
- ICS procedures/failure
- Standard Terminology
- Situational awareness

Communication
Identifying closure rate to ground during landing
Crew coordination/CRM
Cabin security

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. Point of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target

1000 meter range 70% or more of impacts within a 25 meter diameter of target

<500 meter range 70% or more of impacts within a 15 meter diameter of target

Prerequisites: TERF-2311, 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

Range Requirements. Aerial gunnery range with SDZ approved for .50 calibers for day shooting. Targets should range in size from personnel targets to APC size targets.

AG-2842	1.5	180	B,R,M	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 MWPC who is also a NSI required for all personnel in the Basic (B) and Refresher(R) POI.

Introduce:
Aiming techniques on NS
Target identification utilizing LASER aiming device
LASER safety/employment
LASER safety/employment
Nominal Ocular Hazard Distance (NOHD)
NVG considerations
Tracer burnout
Muzzle flash

Practice:
CC vs. AO responsibilities during NS AG
CRM and crew coordination during NS AG
Cabin configuration
Fire control voice commands
Non-verbal fire control signals
Weapon capabilities
Fields of fire versus sectors of fire

Maximum effective range
Maximum range
Aiming techniques
Ballistic considerations
Normal firing operations
Firing Limitations
Weapon emergency procedures
Troubleshooting techniques
Egress considerations with weapons installed
Ammunition inspection and preparation
Ammunition uploading
All flight procedures IAW A1-H53BE-NFM-900
Positive control of weapon
Muzzle awareness
Aerial Gunnery flight patterns
300 feet AGL and below for all initial events
1500 feet AGL and below for all proficiency events
Firing during straight and level flight
Firing during a left or right turn in flight
Firing during landing profile
Firing during take off
Firing during a hover
Fields of fire versus sectors of fire
Use and application of A1-H53BE-NFM-900 weapons checklist
Pre-fire of GAU-21 machine gun
Pre-flight of MWPC
ICS procedures/failure
Standard Terminology
Situational awareness
Communication
Identifying closure rate to ground during landing
Cabin security

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. Point of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target

1000 meter range 70% or more of impacts within a 25 meter diameter of target

<500 meter range 70% or more of impacts within a 15 meter diameter of target

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: Aerial gunnery, laser safe range with SDZ approved for .50 calibers for day and night shooting. Targets should range in size from personnel targets to APC size targets.

AG-2843 1.5 180 B,R,M NS E 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 MWPC who is also a NSI required for all personnel in the Basic (B) and Refresher(R) POI.

Introduce:
- Target identification utilizing LASER aiming devices
- Target hand-off utilizing LASER aiming devices

Practice:
- CC vs. AO responsibilities during section NS AG
- CRM and crew coordination during section NS AG
- Cabin configuration
- Fire control voice commands
- Non-verbal fire control signals
- Weapon capabilities
- Fields of fire versus sectors of fire
- Maximum effective range
- Maximum range
- Aiming techniques
- Ballistic considerations
- Normal firing operations
- Firing Limitations
- Weapon emergency procedures
- Troubleshooting techniques
- Egress considerations with weapons installed
- Ammunition inspection and preparation
- Ammunition uploading
- All flight procedures IAW A1-H53BE-NFM-900
- Positive control of weapon
- Muzzle awareness
- Aerial Gunnery flight patterns
- 300 feet AGL and below for all initial events
- 1500 feet AGL and below for all proficiency events
- Firing during straight and level flight
- Firing during a left or right turn in flight
- Firing during landing profile
- Firing during take off
- Firing during a hover
- Fields of fire versus sectors of fire
- Use and application of A1-H53BE-NFM-900 weapons checklist
- Pre-fire of GAU-21 machine gun
- Pre-flight of MWPC
- ICS procedures/failure
- Standard Terminology
- Situational awareness
- Communication
- Identifying closure rate to ground during landing
- Cabin security
- Aiming techniques on NS
- Target identification utilizing LASER aiming device
- LASER safety/employment
- LASER safety/employment
- Nominal Ocular Hazard Distance (NOHD)

NVG considerations
Tracer burnout
Muzzle flash

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. Point of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target

1000 meter range 70% or more of impacts within a 25 meter diameter of target

<500 meter range 70% or more of impacts within a 15 meter diameter of target

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: Aerial gunnery, laser safe range with SDZ approved for .50 calibers for day and night shooting. Targets should range in size from personnel targets to APC size targets.

3.10.9 Tactics (TAC)

3.10.9.1 Purpose: To introduce aircrew responsibilities for tactical missions.

3.10.9.2 Crew Requirement: P/P/CC/AO. If rounds are utilized and aircrews are not AGQ an AGI is required.

3.10.9 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-2910	2.0	365	B,R,M	D	*	A	2 CH-53

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

Requirement:

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

Introduce:
METT-TSL
Weather considerations for tactical operations
Low threat environment criteria
Flight leadership roles
Helicopter Aircraft Commander (HAC)

Assault Flight Leader (AFL)
Assault Force Commander (AFC)
Direct Air Support Center (DASC)
TACP, TAD, COMMS
Stick leader
Pick up Zone (PZ)/Marshaling Area Control Officer (MACO)
Mission planning products
Execution checklist
Go criteria/No-go criteria
Abort
Bump Plan/Late-join/straggle plan
Rules of engagement
FENCE procedures
Test fire area (TFA)
Threat anticipation
ASE utilization
Weapons control procedures
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical flight techniques
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 during insert
Immediate re-embarkation
Emergency extract
CASEVAC
Hostile area
Battle Damage Assessment (BDA)
Passenger embark/debark (if applicable)
Cargo and vehicle on-load/securing/off-load (if applicable)
External operations if applicable
Downed aircraft immediate actions
Egress considerations with weapons installed
Downed aircrew's wingman responsibilities

Practice:
CC vs. AO responsibilities during tactical operations
CRM and crew coordination during tactical operations
Mission analysis
Cabin configuration
Lookout doctrine
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical formation maneuvering
Passenger embarking/debarking
Cargo and vehicle loading/securing/unloading
External operations
Weapons employment
Wingman considerations

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-2813 per respective weapon system

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 are required to be installed. Rounds and firing of machine guns are optional thought highly encouraged.

Range Requirements: Aerial gunnery range with SDZ approved for .50 calibers for day shooting, targets should range in size from personnel targets to APC size targets if rounds are utilized; Approved CAL/MAL site and TERF maneuver area/route.

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

Introduce:
- 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

Discuss:
- METT-TSL
- Weather considerations for tactical operations
- Flight leadership roles
- Helicopter Aircraft Commander (HAC)
- Assault Flight Leader (AFL)
- Direct Air Support Center (DASC)
- Stick 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
- ASE utilization
- Weapons control procedures
- Scanning techniques (open terrain, dense vegetation)
- Navigational assistance
- Tactical flight techniques

Objective area considerations
Initial Terminal Guidance (ITG) Mirror Flash/Smoke
Initial Point (IP)/Landing zone (LZ)
"Winter/Devil" criteria
Sectors of fire
No Fire Areas (NFA)
Wave-off effects during insert
Immediate re-embarkation
Emergency extract
CASEVAC
Hostile area
Passenger embark/debark (if applicable)
Cargo and vehicle on-load/securing/off-load (if applicable)
External operations if applicable
Downed aircraft immediate actions
Egress considerations with weapons installed
Downed aircrew's wingman responsibilities
Lookout doctrine
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical formation maneuvering
Passenger embarking/debarking
Cargo and vehicle loading/securing/unloading
External operations
Weapons employment
Wingman considerations

Practice:
CC vs. AO responsibilities during tactical operations
CRM and crew coordination during tactical operations
Mission analysis
Cabin configuration
Lookout doctrine
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical formation maneuvering
Passenger embarking/debarking
Cargo and vehicle loading/securing/unloading
External operations
Weapons employment
Wingman considerations

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-2813 per respective weapon system 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: Aerial gunnery range with SDZ approved for .50 calibers for day shooting, targets should range in size from personnel targets to APC size targets if rounds are utilized; CAL/MAL site; Approved TERF maneuver area/route.

External Syllabus Support: Ordnance request for weapons.

Range/Ordnance/Escort request if utilized.

3.10.10 NS High Light Level (HLL)

3.10.10.1 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.

3.10.10.2 General:

(a) Night systems lectures and initial instructional flights and refresher flights shall be conducted by a WTI or NSI.

(b) Aircrew not NSQ HLL requires supervision of an NSI for all events flown with NS.

(c) 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.

(d) Successful completion of HLL-2920 constitutes Night Systems Qualified (NSQ) HLL. A qualification letter signed by the commanding officer is required stating the aircrew is NSQ HLL to carry troops under HLL conditions. The original shall be placed in the aircrew's NATOPS jacket and a copy in the APR with a corresponding logbook entry.

3.10.10.3 Crew requirement: P/P/CC/AO

3.10.10.4 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.

3.10.10.5 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-2120	1.5	180	B,R,M	NS	*	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.

Introduce:
- Aircraft lighting (overt/covert/form)
- FLIR usage
- NVG usage
- Scan pattern utilizing NVG
- Depth perception
- Closure rate
- Section NS tactical formation

Identifying closure rate utilizing NVG
Lead change utilizing NVG
Tactical formation maneuvers while utilizing NVG

Discuss:
CC vs. AO responsibilities during HLL FORM
CRM and crew coordination during HLL FORM
Cabin configuration
Basic tactical formations
Scan pattern utilizing NVG
Identifying closure rate utilizing NVG
Wingman considerations
Wingman updates using standard terminology
"Visual" vs. "Blind"
Inadvertent Instrument Meteorological Conditions (IIMC)
Standard terminology
"Popeye"
"On board"
"Holding hands"
Comfort level
Tactical formation maneuvers
Emergency procedures
Combat cruise vs. Combat spread
Communications vs. No communication lead change
Tactical formation maneuvering
Tactical vs. Form lead change
Tac turn
Center turn
In place turn
Split turn
Cross turn
Break turn
Dig and Pinch
Cover
Resume
Situational awareness
Communication
ICS procedures/failure
Crew coordination/CRM
Aircraft emergencies
Cabin security

Practice:
CC vs. AO responsibilities during HLL FORM
CRM and crew coordination during HLL FORM
Cabin configuration
Basic tactical formations
Scan pattern utilizing NVG
Identifying closure rate utilizing NVG
Wingman updates using standard terminology
Standard terminology
Comfort level
Tactical formation maneuvers
Combat cruise vs. Combat spread
Communications vs. No communication lead change
Tactical vs. Form lead change
Situational awareness
Communication
ICS procedures

Cabin security

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, CAL-2211

HLL-2220	1.5	180	B,R,M	NS	*	A	1 CH-53

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.

Introduce:
- CALs while utilizing NS in HLL
- NVG considerations/failures
- Depth perception/distance estimation
- HLL NS considerations as applicable to CAL operations
- Field of View vs. Field of Regard
- Dark adaptation
- Identifying closure rate while utilizing NVGs
- NVG misperceptions and illusions
- Effects of shadows on terrain suitability for CAL
- Use of chem lights to identify the landing zone

Discuss:
- CC vs. AO responsibilities during HLL CALs
- CRM and crew coordination during HLL CALs
- Cabin configuration
- Tactical approaches
- Situational awareness
- Communication
- Aircraft emergencies
- Aircraft lighting (overt/covert)
- FLIR usage
- Scan pattern
- Identifying closure rate to ground during landing
- ICS procedures/failures
- Crew coordination/CRM
- Aircraft clearance
- Obstacle clearance
- Terrain suitability
- Drift correction/Heading control
- Brown out/white out procedures
- Standard Terminology
- Terrain suitability
- Landing on a slope
- Pattern terminology, upwind, downwind, abeam, final
- Airspeed/altitude during landing approach
- Desert/NVG landing profile
- Effects of wind
- Closure rate
- Lookout doctrine
- Scan pattern vs. sight fixation with NVGs
- Aircraft/Obstacle clearance

Tail rotor clearance
A/C landing gear brake limitations
Rotor wash effect on trees, bushes, tall grass, etc…
Loose objects/blowing debris
Wave off procedures

Practice:
CC vs. AO responsibilities during HLL CALs
CRM and crew coordination during HLL CALs
Cabin configuration
Tactical approaches
Situational awareness
Communication
Aircraft lighting (overt/covert)
Scan pattern
Identifying closure rate to ground during landing
ICS procedures
Aircraft clearance
Obstacle clearance
Identifying terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Pattern terminology, upwind, downwind, abeam, final
Identifying airspeed/altitude during landing approach
Desert/NVG landing profile
Lookout doctrine
Scan pattern vs. sight fixation with NVGs
Aircraft/Obstacle clearance
Tail rotor clearance
Wave off procedures

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: CAL/MAL site

HLL-2221	1.5	180	B,R,M	NS	*	A	2 CH-53

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.

Introduce:
Wingman situational awareness while utilizing NS
Wingman terminology while utilizing NS
Wingman crossover while utilizing NS
Section takeoffs while utilizing NS
Section approaches while utilizing NS

Section landings to a CAL/MAL site while utilizing NS

Discuss:
CC vs. AO responsibilities during section HLL CALs
CRM and crew coordination during section HLL CALs
Cabin configuration
Tactical approaches
Situational awareness
Communication
Aircraft emergencies
Aircraft lighting (overt/covert)
FLIR usage
Scan pattern
Identifying closure rate to ground during landing
ICS procedures/failures
Crew coordination/CRM
Aircraft clearance
Obstacle clearance
Terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Terrain suitability
Landing on a slope
Pattern terminology, upwind, downwind, abeam, final
Airspeed/altitude during landing approach
Desert/NVG landing profile
Effects of wind
Closure rate
Lookout doctrine
Scan pattern vs. sight fixation with NVGs
Aircraft/Obstacle clearance
Tail rotor clearance
A/C landing gear brake limitations
Rotor wash effect on trees, bushes, tall grass, etc…
Loose objects/blowing debris
Wave off procedures

Practice:
CC vs. AO responsibilities during section HLL CALs
CRM and crew coordination during section HLL CALs
Cabin configuration
Tactical approaches
Situational awareness
Communication
Aircraft lighting (overt/covert)
Scan pattern
Identifying closure rate to ground during landing
ICS procedures
Aircraft clearance
Obstacle clearance
Identifying terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Pattern terminology, upwind, downwind, abeam, final
Identifying airspeed/altitude during landing approach
Desert/NVG landing profile
Lookout doctrine
Scan pattern vs. sight fixation with NVGs

Aircraft/Obstacle clearance
Tail rotor clearance
Wave off procedures

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: CAL/MAL site

HLL-2320	1.5	180	B,R,M	NS	*	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:
TERF while utilizing NS in HLL
NVG considerations/failures
Depth perception/distance estimation
HLL NS considerations as applicable to CAL operations
Field of View vs. Field of Regard
Dark adaptation
Identifying closure rate while utilizing NVGs
NVG misperceptions and illusions
Effects of shadows on terrain suitability for CAL
Use of chem lights to identify the landing zone

Discuss:
CC vs. AO responsibilities during HLL TERF
CRM and crew coordination during HLL TERF
Cabin configuration
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Aircraft limitations
Weather Minimums
TERF Currency
Lookout Doctrine
Terrain Flight Considerations
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
Safety considerations/Hazards
ICS procedures/Failure
Emergency procedures
Identifying Closure rate
Aircraft lighting

Navigational assistance while utilizing NS

Practice:
CC vs. AO responsibilities during HLL TERF
CRM and crew coordination during HLL TERF
Cabin configuration
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Lookout Doctrine
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
ICS procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

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: Approved TERF maneuver area/route

HLL-2321	1.5	180	B,R,M	NS	*	A	2 CH-53

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:
TERF while utilizing NS in HLL
NVG considerations/failures
Depth perception/distance estimation
HLL NS considerations as applicable to CAL operations
Field of View vs. Field of Regard
Dark adaptation
Identifying closure rate while utilizing NVGs
NVG misperceptions and illusions
Effects of shadows on terrain suitability for CAL
Use of chem lights to identify the landing zone

Discuss:
CC vs. AO responsibilities during section HLL TERF
CRM and crew coordination during section HLL TERF
Cabin configuration
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Aircraft limitations

Weather Minimums
TERF Currency
Lookout Doctrine
Terrain Flight Considerations
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
Safety considerations/Hazards
ICS procedures/Failure
Emergency procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

Practice:
CC vs. AO responsibilities during section HLL TERF
CRM and crew coordination during section HLL TERF
Cabin configuration
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Lookout Doctrine
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
ICS procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

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: Approved TERF maneuver area/route

HLL-2920	2.0	365	B,R,M	NS	E	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:
Aircraft lighting conditions
Battlefield Illumination (BI)
NS ITG (IR Pointers, IR buzz saw, IR Strobe)
Light Discipline
Emissions Control (EMCON)
MACO Markings during HLL
RMWS / Ramp position considerations

Discuss:
CC vs. AO 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 Battle Positions
Escort flight techniques
Escort Flight Lead (EFL)
Forward Air Controller Airborne (FAC(A))
Forward Air Controller (FAC)
Air Mission Commander (AMC)
Fire support Coordinator (FSC)
Control of Fires
METT-TSL
Weather considerations for tactical operations
Flight leadership roles
Helicopter Aircraft Commander (HAC)
Assault Flight Leader (AFL)
Direct Air Support Center (DASC)
Stick 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
ASE utilization
Weapons control procedures
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical flight techniques
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 during insert
Immediate re-embarkation
Emergency extract
CASEVAC
Hostile area
Passenger embark/debark (if applicable)
Cargo and vehicle on-load/securing/off-load (if applicable)
External operations if applicable
Downed aircraft immediate actions
Egress considerations with weapons installed
Downed aircrew's wingman responsibilities
Lookout doctrine
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical formation maneuvering
Passenger embarking/debarking
Cargo and vehicle loading/securing/unloading
External operations
Weapons employment
Wingman considerations

Practice:
- CC vs. AO responsibilities during HLL tactical operations
- CRM and crew coordination during HLL tactical operations
- Mission analysis
- Cabin configuration
- Lookout doctrine
- Scanning techniques (open terrain, dense vegetation)
- Navigational assistance
- Tactical formation maneuvering
- Passenger embarking/debarking
- Cargo and vehicle loading/securing/unloading
- External operations
- Weapons employment
- 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: Live fire AG range (.50 caliber). Laser approved range.

External Syllabus Support: Ordnance request for weapons

3.10.11 NS Low Light Level (LLL)

3.10.11.1 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.

3.10.11.2 General

(a) Aircrew not NSQ LLL requires supervision of an NSI for all events flown with NS under .0022 lux (LLL).

(b) Aircrew will not begin the NSQ LLL syllabus until NSQ HLL

(c) 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, LLL-2930. Aircrew shall fly all NS events in the NSQ LLL syllabus under ambient light conditions of below .0022 LUX.

(d) 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.

3.10.11.3 Crew requirement: P/P/CC/AO

3.10.11.4 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.

3.10.11.5 Prerequisites: The following events/designations are prerequisites prior to the commencement of the Low Light Level stage:

Designation: Crew Chief / Aerial Observer
Flight: NSQ-HLL

LLL-2230	1.5	180	B,R,M	NS	*	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:
CALs/MALs during LLL conditions

Discuss:
CC vs. AO responsibilities during LLL CALs
CRM and crew coordination during LLL CALs
Cabin configuration
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
Tactical approaches
Situational awareness
Communication
Aircraft emergencies
Aircraft lighting (overt/covert)
FLIR usage
Scan pattern
Identifying closure rate to ground during landing
ICS procedures/failures
Crew coordination/CRM
Aircraft clearance
Obstacle clearance
Terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Terrain suitability
Landing on a slope
Pattern terminology, upwind, downwind, abeam, final
Airspeed/altitude during landing approach
Desert/NVG landing profile
Effects of wind
Closure rate

Lookout doctrine
Scan pattern vs. sight fixation with NVGs
Aircraft/Obstacle clearance
Tail rotor clearance
A/C landing gear brake limitations
Rotor wash effect on trees, bushes, tall grass, etc…
Loose objects/blowing debris
Wave off procedures

Practice:
CC vs. AO responsibilities during LLL CALs
CRM and crew coordination during LLL CALs
Cabin configuration
Tactical approaches
Situational awareness
Communication
Aircraft lighting (overt/covert)
Scan pattern
Identifying closure rate to ground during landing
ICS procedures
Aircraft clearance
Obstacle clearance
Identifying terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Pattern terminology, upwind, downwind, abeam, final
Identifying airspeed/altitude during landing approach
Desert/NVG landing profile
Lookout doctrine
Scan pattern vs. sight fixation with NVGs
Aircraft/Obstacle clearance
Tail rotor clearance
Wave off procedures

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: CAL/MAL site

LLL-2231	1.5	180	B,R,M	NS	*	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:
CALs/MALS operations during LLL conditions

Discuss:

CC vs. AO responsibilities during section HLL CALs
CRM and crew coordination during section HLL CALs
Cabin configuration
Tactical approaches
Situational awareness
Communication
Aircraft emergencies
Aircraft lighting (overt/covert)
FLIR usage
Scan pattern
Identifying closure rate to ground during landing
ICS procedures/failures
Crew coordination/CRM
Aircraft clearance
Obstacle clearance
Terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Terrain suitability
Landing on a slope
Pattern terminology, upwind, downwind, abeam, final
Airspeed/altitude during landing approach
Desert/NVG landing profile
Effects of wind
Closure rate
Lookout doctrine
Scan pattern vs. sight fixation with NVGs
Aircraft/Obstacle clearance
Tail rotor clearance
A/C landing gear brake limitations
Rotor wash effect on trees, bushes, tall grass, etc…
Loose objects/blowing debris
Wave off procedures

Practice:

CC vs. AO responsibilities during section HLL CALs
CRM and crew coordination during section HLL CALs
Cabin configuration
Tactical approaches
Situational awareness
Communication
Aircraft lighting (overt/covert)
Scan pattern
Identifying closure rate to ground during landing
ICS procedures
Aircraft clearance
Obstacle clearance
Identifying terrain suitability
Drift correction/Heading control
Brown out/white out procedures
Standard Terminology
Pattern terminology, upwind, downwind, abeam, final
Identifying airspeed/altitude during landing approach
Desert/NVG landing profile
Lookout doctrine
Scan pattern vs. sight fixation with NVGs
Aircraft/Obstacle clearance
Tail rotor clearance

Wave off procedures

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: CAL/MAL site

LLL-2330	1.5	180	B,R,M	NS	*	A	1 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:
TERF while utilizing NS in LLL

Discuss:
CC vs. AO responsibilities during LLL TERF
CRM and crew coordination during LLL TERF
Cabin configuration
LLL NS considerations
NVG considerations/failures
Depth perception/distance estimation
Field of View vs. Field of Regard
Dark adaptation
Identifying closure rate while utilizing NVGs
NVG misperceptions and illusions
Effects of shadows on terrain
Visual acuity degradation
Depth perception degradation
Distance estimation degradation
Contrast degradation
Effects of reduced or no shadows during TERF
Optical flow degradation
Scintillation
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Aircraft limitations
Weather Minimums
TERF Currency
Lookout Doctrine
Terrain Flight Considerations
Bunt, Roll, Quick stop, Masking/unmasking TERF turn

Safety considerations/Hazards
ICS procedures/Failure
Emergency procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

Practice:
CC vs. AO responsibilities during LLL TERF
CRM and crew coordination during LLL TERF
Cabin configuration
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Lookout Doctrine
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
ICS procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

Performance Standards: Conduct aircrew duties in the TERF regime while utilizing NS in a LLL condition IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Prerequisite: NSQ HLL

Range Requirements: Approved TERF maneuver area/route

LLL-2331	1.5	180	B,R,M	NS	*	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:
Multiple aircraft operations in the TERF regime while utilizing NS in LLL.

Discuss:
CC vs. AO responsibilities during LLL TERF
CRM and crew coordination during LLL TERF
Cabin configuration
LLL NS considerations
NVG considerations/failures
Depth perception/distance estimation
Field of View vs. Field of Regard
Dark adaptation
Identifying closure rate while utilizing NVGs
NVG misperceptions and illusions
Effects of shadows on terrain
Visual acuity degradation

Depth perception degradation
Distance estimation degradation
Contrast degradation
Effects of reduced or no shadows during TERF
Optical flow degradation
Scintillation
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Aircraft limitations
Weather Minimums
TERF Currency
Lookout Doctrine
Terrain Flight Considerations
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
Safety considerations/Hazards
ICS procedures/Failure
Emergency procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

Practice:
CC vs. AO responsibilities during LLL TERF
CRM and crew coordination during LLL TERF
Cabin configuration
Low level flight/Contour flight
Crew comfort levels
Standard terminology
Operational Power Checks
Cockpit Scan
Cabin security
Lookout Doctrine
Bunt, Roll, Quick stop, Masking/unmasking TERF turn
ICS procedures
Identifying Closure rate
Aircraft lighting
Navigational assistance while utilizing NS

Performance Standards: Conduct aircrew duties in the TERF regime while utilizing NS in a LLL condition IAW above listed items, NATOPS and NTTP 3-22.3-CH53.

Prerequisite: LLL-2330

Range Requirements: Approved TERF maneuver area/route

LLL-2930	2.0	365	B,R,M	NS	E	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: WTI required for all personnel in the Basic (B) and

Refresher(R) POI.

Discuss:

CC vs. AO responsibilities during section LLL tactical operations
CRM and crew coordination during section LLL tactical operations
Cabin configuration
Aircraft lighting conditions
Battlefield Illumination (BI)
NS ITG (IR Pointers, IR buzz saw, IR Strobe)
Light Discipline
Emissions Control (EMCON)
MACO Markings during HLL
RMWS / Ramp position considerations
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 Airborne (FAC(A))
Forward Air Controller (FAC)
Air Mission Commander (AMC)
Fire support Coordinator (FSC)
Control of Fires
METT-TSL
Weather considerations for tactical operations
Flight leadership roles
Helicopter Aircraft Commander (HAC)
Assault Flight Leader (AFL)
Direct Air Support Center (DASC)
Stick 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
ASE utilization
Weapons control procedures
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical flight techniques
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 during insert
Immediate re-embarkation
Emergency extract
CASEVAC
Hostile area
Passenger embark/debark (if applicable)
Cargo and vehicle on-load/securing/off-load (if applicable)
External operations if applicable
Downed aircraft immediate actions

Egress considerations with weapons installed
Downed aircrew's wingman responsibilities
Lookout doctrine
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical formation maneuvering
Passenger embarking/debarking
Cargo and vehicle loading/securing/unloading
External operations
Weapons employment
Wingman considerations

Practice:
CC vs. AO responsibilities during LLL tactical operations
CRM and crew coordination during LLL tactical operations
Mission analysis
Cabin configuration
Lookout doctrine
Scanning techniques (open terrain, dense vegetation)
Navigational assistance
Tactical formation maneuvering
Passenger embarking/debarking
Cargo and vehicle loading/securing/unloading
External operations
Weapons employment
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: Live fire AG range (.50 Caliber). Laser approved range.

External Syllabus Support: Ordnance request for weapons

3.11 MISSION SKILL PHASE (3000)

3.11.1 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.

3.11.2 General:

(a) For initial, refresher, or when the aircrew under instruction are not proficient in a particular Mission Skill, training codes shall be given by an instructor pilot that is proficient in that Mission Skill code(s). Mission skill codes should be given to all those aircrew (Pilots, Crew Chief, AO)

within the aircraft that meet the prerequisite. Additionally, for larger flights, 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.

(b) 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 AT-3340.. CC/AO 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.

(c) Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL and Aerial Gunnery Stage Complete.

(d) 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.

(e) Multiple Mission Skill training events may be logged per sortie (e.g. EXP-3240, AT-3340, AD-3540) 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 (e.g. for pilots: EXP-3240, AT-3340, AD-3540, LLL-2930, EXT-2430, EXT-2440, EXT-2441 and LLL-2331).

(f) The CC/AO 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.

(g) Mission Skill events shall be flown with operational ASE, installed .50 calibers (as required for the tactical scenario), (rounds and expendables optional), whenever practical.

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

(i) As of the signing of this manual, the current HMH Core MCTs are as follows:

Aviation Operations from Expeditionary Shore-Based Sites (MCT 1.3.3.3.2) (EXP)

Combat Assault Transport (MCT 1.3.4.1) (AT)

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)

3.11.3 Crew Requirements: P/P/CC/AO

3.11.4 Academic Training:

3.11.4.1 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.

3.11.4.2 Upon completion, the CC/AO 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 beginning on Pg 3-183 of this document.

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

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

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

http://www.mawts1.usmc.smil.mil/

T&R	ACADEMIC SYLLABUS
	CORE MISSION SKILL PHASE (3000)
ACAD-3002	(U) NEO EXECUTION
ACAD-3004	(S) PERSONNEL RECOVERY
ACAD-3005	(S) CH-53 SPECIFIC TRAP TTPS
ACAD-3006	(U) CASEVAC

3.11.5 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

3.11.6 Mission Skill Phase (3000) Flight Events

EXP-3140 2.0 365 B,R,M (NS) * A 1+ CH-53

Goal: Demonstrate the capability to operate from a shore-based site under a low to medium threat environment. Marine aviation units maintain the

capability to operate from expeditionary shore-based sites (in line with unit/platform capabilities) to include Forward Operating Bases (FOBs), Expeditionary Airfields (EAFs), Forward Arming and Refueling Points (FARPS), austere forward operating sites, Tactical Landing Zones (TLZ), Helicopter Landing Zones (HLZs), etc. The Marine Air Traffic Control Mobile Team (MMT) can support operations at expeditionary shore-based sites by providing initial rapid response air traffic control (ATC), and command, control, and communications (C3). (JP 3-1, NDP 1, MCWP 3-2, MCWP 3-25.8)

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:
TAC-2910
TAC-2911
HLL-2920 (as applicable)
LLL-2930 (as applicable)

Introduce:
MMT operations
EAF, FOB, FARP, LAAGER site operations

Performance Standard: Plan, brief and execute a tactical mission to or from expeditionary shore-based (Airbase, EAF, FOB, COB, FARP, LAAGER site). Ensure aircrews properly plan for and demonstrate knowledge of the requirements of operating in an austere environment.

Prerequisite: NSQ LLL, AGQ

Ordnance: Two .50 caliber machine guns are required (Tail gun is optional) Rounds and firing of the machine guns are optional.

Range Requirement: Live fire and expendable range as required

External Syllabus Support: ATC, DASC, ASLT and/or MMT for airspace control are preferred. AGS for expeditionary shore-based site setup preferred

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

Goal: Demonstrate the capability to conduct 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 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 3-2, 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:
INT-2105
INT-2106
TAC-2910
TAC-2911
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 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.

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: Live fire range as required.

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 3-2, 3-11.4, 3-21.2, 4-1, 4-11, 4-11.3, NDP-4, NWP 4-01, 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 sec.

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: Live fire range and approved drop zone as required.

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 compliment of security, ground search, and medical personnel. (JP 1, 3-0, 3-50.2, MCWP 2-6, 3-2, 3-11.4, 3-24, 3-25.4, 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: Live fire range as required

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 3-2, 3-11.4, 3-16, 3-24, 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-2540s

Ordnance: Two .50 caliber machine guns are required (Tail gun is Optional); Rounds and firing of the machine guns are optional.

Range Requirement: Live fire range as required.

3.12 CORE PLUS SKILL PHASE (4000)

3.12.1 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.

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

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

(4000) Core Plus Phase Academics
(4100) Helicopter Insertion and Extraction Techniques
(4200) Aviation Delivered Ground Refueling (ADGR)
(4400) Terrain Flight Externals (TERF EXT)
(4500) Defensive Measures / Ground Threat Reaction
(4600) Chemical, Biological, Radiation, Nuclear
(4700) Carrier Qualification
(4800) Tail Gunnery / Moving Target Gunnery
(4900) Tactics & Core Plus Mission Skills

3.12.1.3 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

3.12.1.4 Ground/Academic Training

3.12.1.5 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.

3.12.1.6 Upon completion, the CC/AO 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 starting on Pg 1-183 of this document.

3.12.1.7 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:

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

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

http://www.mawts1.usmc.smil.mil/

T&R CODE	ACADEMIC SYLLABUS
	CORE PLUS SKILL PHASE (4000)
ACAD-4011	(U) EA Aviation Delivered Ground Refueling
ACAD-4050	(U) EA Basic principles of electronic warfare
ACAD-4051	(U) EA DM/GTR part 1
ACAD-4052	(U) EA DM/GTR part 2
ACAD-4053	(U) EA Training the tail gunner

3.12.1.9 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/AO

3.12.2 Helicopter Insertion/Extraction Techniques (HIE)

3.12.2.1 Purpose: To introduce HIE methods required in executing special operations.

3.12.2.2 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.

3.12.2.3 Crew Requirement: P/P/CC/AO

3.12.2.4 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.

3.12.2.5 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/AO

HIE-4110 1.5 365 B,R,M D * A 1 CH-53

Goal: Introduce and practice procedures for tactical insertion

helocast.

Requirement:

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

Discuss:
- CC vs. AO responsibilities during helocast operations
- CRM and crew coordination during helocast operations
- Cabin configuration
- 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
- Ramp position
- 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 for helocast operations

Practice:
- CC vs. AO responsibilities during helocast operations
- CRM and crew coordination during helocast operations
- Cabin configuration
- Safety procedures
- Emergency procedures
- Cabin configuration
- ICS procedures/failure
- Situational awareness

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

Prerequisite: TERFQ, INT-2106

External Syllabus Support: Jump master, safety boat and safety personnel

HIE-4140 1.5 365 B,R,M (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.

Introduce:
- CC vs. AO responsibilities during HRST operations
- CRM and crew coordination during HRST operations
- Cabin configuration

Safety considerations with door/ramp open and passengers onboard
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
Hung roper procedures
Fouled rappel line procedures
Fast rope operations
Fouled fast rope procedures
Special Patrol Insertion/Extraction (SPIE) System
Night SPIE
SPIE from water
Sequence of events
Fouled SPIE rope
Hung Roper
Jacobs Ladder operations
Sequence of events
Hung climber
Fouled ladder
Emergency procedures for HIE operations
Safety

Practice:
CC vs. AO responsibilities during HRST operations
CRM and crew coordination during HRST operations
Cabin configuration
ICS procedures
Safety procedures
Hand and arm signals
Obstacle clearance
Associated equipment

Performance Standards: Conduct tactical insertion and/or extraction of a ground force via rappelling, fast-rope or SPIE IAW applicable NATOPS and NTTP 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 1.5 365 B,R,M (NS) * A 1 CH-53

Goal: Introduce and practice procedures for tactical insertion via paraops.

Requirement:

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

Introduce:
- CC vs. AO responsibilities during HRST operations
- CRM and crew coordination during HRST operations
- Cabin configuration
- Safety considerations with door/ramp open and passengers onboard
- Paradrop operations
- Paraops
- Sequence of events
- Paraops 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
- Emergency procedures

Practice:
- CC vs. AO responsibilities during PARAOPS
- CRM and crew coordination during PARAOPS
- Cabin configuration
- Safety procedures
- Emergency procedures
- ICS procedures
- Cabin preparation
- Hand and arm signals
- Obstacle clearance
- Associated equipment
- Cabin preparation

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

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

External Syllabus Support: Jump master and ground safety personnel

3.12.3 Aviation Delivered Ground Refueling (ADGR)

3.12.3.1 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.

3.12.3.2 Crew Requirement: P/P/CC/AO

3.12.3.3 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.

3.12.3.4 Prerequisites: The following events/designations are prerequisites prior to the commencement of the Terrain Flight External stage:

Academic: See event
Flight: see event
Designation: CC/AO

ADGR-4200 1.5 * B,R,SC D * A 1 STATIC CH-53

Goal: Introduce and practice internal loading procedures and utilization of the TBFDS.

Requirement:

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

Introduce:
- CC vs. AO responsibilities during ADGR operations
- CRM and crew coordination during ADGR operations
- Cabin configuration
- TBFDS
- TBFDS manual and pocket check list
- Installation considerations for TBFDS
- Various TBFDS loading and unloading methods
- Various TBFDS tank configurations and considerations
- TBFDS restraint system
- TBFDS refueling methods (gravity/pressure/aerial)
- Switchology for fuel delivery/range extension/refuel
- Types of FARPs
- Crew member/MMT responsibilities
- FARP setup/pre-flight
- FARP day/night operations
- Taxi of aircraft/vehicle
- A/C Lighting considerations/configurations
- Chem light utilization (TBFDS components/personnel/ITG)
- Refueling procedures
- Fuel connection ports for various type aircraft/vehicles
- Danger zones for various type aircraft/vehicles
- FARP post flight and clean up
- Fire fighting equipment/procedures

Practice:
- CC vs. AO responsibilities during ADGR operations
- CRM and crew coordination during ADGR operations
- Cabin configuration
- TBFDS loading, restraint, and unloading methods
- Switchology for fuel delivery/range extension/refuel
- Crew member responsibilities
- FARP setup/pre-flight
- FARP day/night operations
- Taxi of aircraft/vehicle
- Refueling procedures
- FARP post flight and clean up
- Safety procedures
- ICS procedures
- Emergency procedures
- Hand and arm signals

Performance Standards: Conduct TBFDS setup and aviation ground delivered refueling operations IAW above listed items, NTTP 3-22.3-53, and APCL-CH53.

Prerequisite: INT-2105, ACAD-4011

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

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

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

Requirement:

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

Introduce:
- CC vs. AO responsibilities during ADGR operations
- CRM and crew coordination during ADGR operations
- Cabin configuration
- TBFDS
- TBFDS manual and pocket check list
- Installation considerations for TBFDS
- Various TBFDS loading and unloading methods
- Various TBFDS tank configurations and considerations
- TBFDS restraint system
- TBFDS refueling methods (gravity/pressure/aerial)
- Switchology for fuel delivery/range extension/refuel
- Types of FARPs
- Crew member/MMT responsibilities
- FARP setup/pre-flight
- FARP day/night operations
- Taxi of aircraft/vehicle
- A/C Lighting considerations/configurations
- Chem light utilization (TBFDS components/personnel/ITG)
- Refueling procedures
- Fuel connection ports for various type aircraft/vehicles
- Danger zones for various type aircraft/vehicles
- FARP post flight and clean up
- Fire fighting equipment/procedures

Practice:
- CC vs. AO responsibilities during ADGR operations
- CRM and crew coordination during ADGR operations
- Cabin configuration
- TBFDS loading, restraint, and unloading methods
- Switchology for fuel delivery/range extension/refuel
- Crew member responsibilities
- FARP setup/pre-flight
- FARP day/night operations
- Taxi of aircraft/vehicle
- Refueling procedures
- FARP post flight and clean up
- Safety procedures
- ICS procedures
- Emergency procedures
- Hand and arm signals

Performance Standards: Conduct TBFDS setup and aviation ground delivered refueling operations IAW above listed items, NTTP 3-22.3-53, and APCL-CH53.

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

4011, ADGR-4200

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

3.12.4 Terrain Flight External Loads (TERF EXT)

3.12.4.1 Purpose: To develop skills necessary to conduct external operations in the terrain flight regime under all ambient conditions.

3.12.4.2 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.

3.12.4.3Crew Requirement:
P/P/CC/AO

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.

3.12.4.4 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.

3.12.4.5 Prerequisites:
Academic: See event
Flight: 2411, 2421, 2430
Designation: CC/AO

TERF EXT-4412	1.5	365	B,R,M	D	*	A	1 CH-53

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:
Single/dual point external operations while in the TERF environment

Discuss:
CC vs. AO responsibilities during TERF EXT operations
CRM and crew coordination during TERF EXT operations
Cabin configuration
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
Safety considerations
Aircraft emergency with external load during TERF
Emergency external jettison procedure

Practice:
CC vs. AO responsibilities during TERF EXT operations
CRM and crew coordination during TERF EXT operations
Cabin configuration
Standard terminology
ICS procedures
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
Safety considerations

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.

Range Requirements: Approved CAL/MAL site, approved TERF maneuver area/route

External Syllabus Support: HST, certified external load

TERF EXT-4440	1.5	180	B,R,M	NS	*	A	1 CH-53

Goal: Introduce and practice external operations while in the TERF regime and 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:
Single/dual point external operations while in the TERF environment utilizing Night Systems

Discuss:
CC vs. AO responsibilities during TERF EXT operations
CRM and crew coordination during TERF EXT operations
Cabin configuration
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
Safety considerations
Aircraft emergency with external load during TERF
Emergency external jettison procedure

Practice:
CC vs. AO responsibilities during TERF EXT operations
CRM and crew coordination during TERF EXT operations
Cabin configuration
Standard terminology
ICS procedures
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
Safety considerations

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.

Range Requirements: Approved CAL/MAL site, approved TERF maneuver area/route

External Syllabus Support: HST, certified external load

3.12.5 Defensive Measures (DM)

3.12.5.1 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 air-to-air threat. Aircrew may be designated DMQ by the Commanding Officer after completing DM-4510 and DM-4511.

3.12.5.2 Crew Requirement: P/P/CC/AO

3.12.5.3 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.

3.12.5.4 Prerequisites:
Academic: See event
Flight: TERF-2311
Designation: CC/AO
Qualification: TERFQ

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

Goal: Introduce and practice aircrew responsibilities as a section against an adversary helicopter.

Requirement:

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

Discuss:
CC vs. AO responsibilities during DM
CRM and crew coordination during DM
Cabin configuration
Section helicopter DM against an adversary helicopter attacking from pre-briefed and unknown locations
Rotary wing attack profiles
DM Program Guide
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Air combat maneuvering
Rules of engagement
Standard terminology
DM training rules
DM walk through
DM line numbers
Section tactical maneuvers
Mutual support/wingman position
Free and engaged roles and responsibilities
Crew Comfort
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

Practice:
CC vs. AO responsibilities during DM
CRM and crew coordination during DM
Cabin configuration
Section helicopter DM against an adversary helicopter attacking from pre-briefed and unknown locations
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Air combat maneuvering
Rules of engagement
Standard terminology
DM walk through
DM line numbers

Section tactical maneuvers
Mutual support/wingman position
Free and engaged roles and responsibilities
Crew Comfort
Aircraft limitations
Weapons handling
Weapons lead techniques
ASE utilization
ICS procedures/failure
Tactical formation maneuvers

Performance Standards: Conduct helicopter section tactics against a helicopter adversary threat IAW above listed items, MAWTS-1 DM Program Guide and NTTP 3-22.3-53. 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 helicopter threats. Utilize standard terminology in intra-aircraft communications.

Prerequisite: TERFQ, ACAD-2004, ACAD-2019, ACAD-4051, ACAD-4052

Ordnance: 60 flares and 2 .50 Caliber machine guns

Range Requirements: Expendable capable range, TERF maneuver area/route

External Syllabus Support: Rotary wing aggressor

DM-4511	1.5	365	B,R,M	D	*	E	2 CH-53

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.

Discuss:
CC vs. AO responsibilities during DM
CRM and crew coordination during DM
Cabin configuration
Section helicopter DM against a fixed wing adversary attacking from pre-briefed and unknown locations
Rotary wing attack profiles
DM Program Guide
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Air combat maneuvering
Rules of engagement
Standard terminology
DM training rules
DM walk through
DM line numbers
Section tactical maneuvers
Mutual support/wingman position

Free and engaged roles and responsibilities
Crew Comfort
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

Practice:
CC vs. AO responsibilities during DM
CRM and crew coordination during DM
Cabin configuration
Section helicopter DM against a fixed wing adversary attacking from pre-briefed and unknown locations
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Air combat maneuvering
Rules of engagement
Standard terminology
DM walk through
DM line numbers
Section tactical maneuvers
Mutual support/wingman position
Free and engaged roles and responsibilities
Crew Comfort
Aircraft limitations
Weapons handling
Weapons lead techniques
ASE utilization
ICS procedures/failure
Tactical formation maneuvers

Performance Standards: Explain helicopter section tactics against a fixed wing adversary threat IAW the MAWTS-1 DM Program Guide and NTTP 3-22.3-53. 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, ACAD-2004, ACAD-2019, ACAD-4051, ACAD-4052

Ordnance: 60 flares or 30 chaff/30 flares and 2 .50 caliber machine guns

Range Requirements: Expendable capable range, TERF maneuver area/route

External Syllabus Support: Fixed wing aggressor

3.12.6 Ground Threat Reaction (GTR)

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

3.12.6.2 Crew Requirement: P/P/CC/AO

3.12.6.3 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.

3.12.6.4 Prerequisites:
Academic: See event
Flight: TERF-2311
Designation: CC/AO
Qualification: TERFQ

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

Goal: Conduct RADAR ground based 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 a NSI required for all personnel in the Basic (B) and Refresher(R) POI if conducted at night.

Introduce:
CC vs. AO responsibilities during GTR
CRM and crew coordination during GTR
Cabin configuration
Various threat signatures
Threat recognition and detection
Evasive maneuvers coordinated with dispensing of chaff
Section threat avoidance
Masking and use of chaff and flares
Operation of AAR-47, ALE-47, AAQ-24, and APR-39
MAWTS-1 GTR program guide
GTR training rules
GTR Walk through
Five axioms of survival
Lookout doctrine and threat detection
Threat evaluation
Giving the attack warning
Avoiding detection
Evasive maneuvers/threat counter tactics
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

Practice:
Weapons handling

Weapons lead techniques
Crew coordination/CRM
ICS procedures/failure
Aircraft emergency procedures
Communication
Cabin configuration
Safety considerations
Wingman considerations
Tactical formation maneuvers

Performance Standards: Explain helicopter section tactics against a low altitude surface-to-air radar threat IAW the MAWTS-1 GTR Program Guide and NTTP 3-22.3-53. 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-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. TERF-2321~NS, TERF-2331~LLL, TERF-2311

Ordnance: 30 chaff, 30 flares and 2 .50 Caliber machine guns

Range Requirements: Expendable capable range, TERF maneuver area/route

External Syllabus Support: Ground emitter

3.12.7 Chemical, Biological, Radiological and Nuclear (CBRN)

3.12.7.1 Purpose: To conduct flight operations while wearing NBC protective equipment.

3.12.7.2 General: For the safe execution of initial CBRN flights, one pilot and one air crewman shall remain unmasked.

3.12.7.3 Crew Requirement: P/P/CC if done in the aircraft

3.12.7.4 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.

3.12.7.5 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: CC/AO

CBRN-4600	1.5	*	B	(NS)	*	*	1 CH-53

Goal: Conduct flight in a simulated CBRN environment

Requirement

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

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: Conduct Air Crew responsibilities while wearing CBRN gear. Communicate effectively while wearing CBRN gear.

Prerequisite: CAL-2210, CAL-2220~NS, CAL-2230~LLL

Range Requirements: CAL/MAL site

3.12.8 Carrier Qualification (CQ)

3.12.8.1 Purpose. To qualify aircrew for day and NS shipboard operations; the term "carrier qualification" encompasses all shipboard landing operations.

3.12.8.2 General:

(a) 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 OPNAVINST 3710.7. Briefing should include patterns, altitudes, airspeeds and Helicopter director signals.

(b) 5 day and 5 night FCLPs shall be accomplished within 30 days prior to shipboard qualifications. Refer to CH-53E NATOPS, Chapter 8, Shipboard Procedures.

(c) Initial day/night carrier qualification shall be made under ideal weather conditions to include a visible horizon.

(d) Each initial or refresher instructional flight requires a minimum of 5 CQs; additional CQs as required to demonstrate proficiency.

(f) 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-2742 requires an NSI when not NS qualified in the light level event is conducted.

3.12.8.3 Crew Requirement. CQ-4711: P/P/CC/AO; CQ- 4743: P/P/CC/AO

3.12.8.4 Ground Academic Training: Aircrew should read and be familiar with topics contained in the CH-53 NATOPS, LHA/LHD NATOPS, and OPNAVINST 3710.7 regarding shipboard operations.

3.12.8.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Carrier Qualification stage:

CQ-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:
- CC vs. AO responsibilities during day CQ
- CRM and crew coordination during day CQ
- Cabin configuration
- Day Carrier Qualifications
- Shipboard operations
- 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
- Hand and arm signals
- Safety procedures
- Ditching procedures
- Parking brake procedures
- Heading and drift corrections
- Standard Terminology

Practice:
- CC vs. AO responsibilities during day CQ
- CRM and crew coordination during day CQ
- Cabin configuration
- ICS procedures
- Aircraft clearance
- Shipboard operations
- Comfort level
- Feet wet/landing checklist
- Identifying closure rate
- Aircraft lighting procedures
- Voice procedures/Lost communication procedures
- Shipboard landing patterns
- Shipboard holding patterns
- Shipboard instrument patterns

Air space control in the shipboard environment
Hand and arm signals
Safety procedures
Parking brake procedures
Heading and drift corrections
Standard Terminology
Parking brake procedures
Heading and drift corrections

Performance Standards: Conduct 5 day CQs IAW above listed items, CH-53 NATOPS and appropriate shipboard NATOPS.

Prerequisite: FCLP-2710

External Syllabus Support: Helicopter capable ship

CQ-4743	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: NS considerations for appropriate light level Shipboard lighting

Practice
CC vs. AO responsibilities during NS CQ
CRM and crew coordination during NS CQ
Cabin configuration
ICS procedures
Aircraft clearance
Shipboard operations
Comfort level
Feet wet/landing checklist
Identifying closure rate
Aircraft lighting procedures
Voice procedures/Lost communication procedures
Shipboard landing patterns
Shipboard holding patterns
Shipboard instrument patterns
Air space control in the shipboard environment
Hand and arm signals
Safety procedures
Parking brake procedures
Heading and drift corrections
Standard Terminology
Parking brake procedures
Heading and drift corrections

Performance Standards: Conduct 5 day CQs IAW above listed items, CH-53 NATOPS and appropriate shipboard NATOPS.

Prerequisite: NSQ HLL, NSQ LLL~LLL, FCLP-2742, and CQ-4711.

External Syllabus Support: NS compatible helicopter capable ship

3.12.9 Tail Gunnery (TG)

3.12.9.1 Purpose: To demonstrate proficiency in delivering fire on targets of opportunity using the GAU-21 Ramp Mounted Weapon System (RMWS) .50 caliber machine gun.

3.12.9.2 General:

(a) Aircrew shall be AGQ on the GAU-21 MWPC prior to beginning the tail gunnery stage of training.

(b) No portion of the GAU-21 AG stage shall be waived or deferred.

(c) All aircrew employing weapons shall have the current A1-H53BE-NFM-900 with all of the interim changes incorporated, on their person.

(d) TG-4840 certifies the aircrew as a tail gunner with the GAU-21 RMWS. Aircrew may be qualified a tail gunner at the discretion the commanding officer after completing TG-4840. If the Commanding Officer chooses to qualify aircrew as tail gunner a qualification letter signed by the Commanding Officer shall be issued and placed in both the individuals NATOPS & APR jacket.

(e) 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.

(f) 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.

(g) 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.

(h) Aircrew does not lose their tail gunnery "Qualification" status due to loss of proficiency (re-fly interval) in an individual event (e.g. TG-4840). Aircrew must re-fly that individual event with another qualified aircrew member in order to regain proficiency in that event.

(i) Aircrew who lose proficiency in all associated tail gunnery flight events (TG 4810-4840) automatically lose their "Qualification" status and must complete the Refresher(R) POI with the appropriately designated instructors.

(j) A designated AGI shall only act in the capacity of an AGI when "Qualified" and proficient in tail gunnery.

(k) Approved laser aiming devices are required and shall be utilized during all night systems (NS) tail gunnery flight events.

3.12.9.3 Crew Requirements: P/P/CC/AO/AO

3.12.9.4 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-4800	1.5	*	B,R	(N)	*	A	1 STATIC CH-53

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.

Discuss:
- NAVAIR 11-53DA-1
- A1-H53BE-NFM-900

Introduce:
- Installation IAW A1-H53BE-NFM-900
- LASER installation
- Pre-flight IAW A1-H53BE-NFM-900
- Cargo loading and unloading techniques
- Passenger loading and unloading techniques
- Install and configuration of aircrew restraint system
- Cabin Configuration with ramp level considerations
- Cabin Security with ramp level considerations
- ICS cord discipline
- Ammunition re-loading
- Ammunition cans retention
- Safety hazards with ramp level during flight
- Egress considerations

Practice:
- Installation IAW A1-H53BE-NFM-900
- LASER installation
- Pre-flight IAW A1-H53BE-NFM-900
- Cargo loading and unloading techniques
- Passenger loading and unloading techniques
- Normal firing operations
- Ammunition re-loading
- Ammunition can retention
- Weapons emergencies
- Troubleshooting
- Reloading
- Crew Coordination/CRM

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 guns, approved LASER aiming device, 10 dummy rounds

TG-4810	1.5	*	B,R	D	*	A	1 CH-53

Goal: Introduce and practice RMWS operational considerations, safety precautions, and crew coordination for conducting multi-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. AO responsibilities during tail gunnery operations
- CRM and crew coordination during tail gunnery operations
- Cabin configuration
- ICS procedures
- 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
- Aerial ballistics firing in the rear hemisphere
- Firing during straight and level flight
- Firing during a left or right turn in flight
- Firing during landing profile
- Firing during take off
- Firing during a hover
- Reloading procedures
- Post flight

Practice:
- CC vs. AO responsibilities during tail gunnery operations
- CRM and crew coordination during tail gunnery operations
- Cabin configuration
- ICS procedures
- Normal firing operations
- Aiming techniques firing from the rear hemisphere
- Weapon employment from the rear hemisphere
- Weapon emergencies
- Troubleshooting
- Positive weapons control
- Muzzle awareness
- Firing limitations
- Aiming techniques
- Firing during straight and level flight
- Firing during a left or right turn in flight
- Firing during landing profile
- Firing during take off
- Firing during a hover
- Sectors of fire
- Target hand-off
- Ammunition can retention
- Egress considerations

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. Point

of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target
1000 meter range 70% or more of impacts within a 25 meter diameter of target
<500 meter range 70% or more of impacts within a 15 meter diameter of target

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, 600 rounds .50 caliber ordnance per MWPC

Range Requirements: Aerial gunnery range with SDZ approved for .50 CAL for day shooting. Targets should range in size from personnel targets to APC size targets.

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:
- Wingman NFAs
- Section responsibilities
- Sectors of fire
- Target hand-off within a section

Practice:
- CC vs. AO responsibilities during tail gunnery operations
- CRM and crew coordination during tail gunnery operations
- Cabin configuration
- ICS procedures
- 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
- Aerial ballistics firing in the rear hemisphere
- Normal firing operations
- Weapon emergencies
- Troubleshooting
- Positive weapons control
- Muzzle awareness
- Firing limitations
- Firing during straight and level flight
- Firing during a left or right turn in flight
- Firing during landing profile
- Firing during take off
- Firing during a hover

Ammunition can retention
Egress considerations
Post flight

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. Point of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target
1000 meter range 70% or more of impacts within a 25 meter diameter of target
<500 meter range 70% or more of impacts within a 15 meter diameter of target

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, 600 rounds .50 caliber ordnance per MWPC

Range Requirements: Aerial gunnery range with SDZ approved for .50 cal for day shooting. Targets should range in size from personnel targets to APC size targets.

TG-4840	1.5	180	B,R,M	NS	E	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:
Aiming techniques in a section while utilizing NS
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:
CC vs. AO responsibilities during tail gunnery operations
CRM and crew coordination during tail gunnery operations
Cabin configuration

ICS procedures
Normal firing operations
Weapon emergencies
Troubleshooting
Positive weapons control
Muzzle awareness in a section while utilizing NS
Target handoff while utilizing NS
Weapons employment in a section
LASER employment in a section
RMWS scan pattern while utilizing NS
Firing limitations
Weapon reloading procedures while utilizing NS
Ammunition can retention
ICS cord discipline
Firing during straight and level flight
Firing during a left or right turn in flight
Firing during landing profile
Firing during take off
Firing during a hover
Firing while expending chaff/flares
Post flight

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. Point of aim, point of impact shall be within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target
1000 meter range 70% or more of impacts within a 25 meter diameter of target
<500 meter range 70% or more of impacts within a 15 meter diameter of target

Prerequisites: TG-4811

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, 600 rounds .50 caliber ordnance per MWPC.

Range Requirements: Laser safe aerial gunnery range with SDZ approved for .50 CAL for night shooting. Targets should range in size from personnel targets to APC size targets.

3.12.10 Moving Target Gunnery (MTG)

3.12.10.1 Purpose: To introduce techniques and profiles in conducting MTG.

3.12.10.2 General

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

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

(c) 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.

(d) 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.

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

(f) 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.

(g) 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.

(h) 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.

(i) Laser aiming devices are required if event is flown at night.

3.12.10.3 Crew Requirements: P/P/CC/AO

3.12.10.4 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.

MTG-4841	1.5	365	B,R,M	(NS)	*	A	1+ CH-53

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:
- Different moving target profiles
- Moving land target
- Shadow gunnery
- Towed banner
- Moving water target
- IR spotlight
- LASER aiming device as moving target
- Dart Applicable MTG
- Aiming techniques
- Lead compensation

Practice:
- CC vs. AO responsibilities during moving target gunnery

CRM and crew coordination during moving target gunnery
Cabin configuration
ICS procedures
Safety procedures
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. Demonstrate the ability to engage moving targets with point of aim, point of impact within the following parameters.

>1500 meter range 50% or more of impacts within a 50 meter diameter of target
1000 meter range 70% or more of impacts within a 25 meter diameter of target
<500 meter range 70% or more of impacts within a 15 meter diameter of target

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

Ordnance: 600 rds .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: Aerial gunnery, laser safe (if applicable) range with SDZ approved for .50 caliber for day and night shooting. Targets should range in size from personnel targets to APC size targets.

External Syllabus Support: Approved moving target; Moving land target preferred method.

3.12.11 Tactics (TAC)

3.12.11.1 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.

3.12.11.2 General: Aircrew may conduct these flights in high or low light level conditions if flown at night.

3.12.11.3 Crew Requirement: P/P/CC/AO

3.12.11.4 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-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:
Division Tactics

Practice:
CC vs. AO responsibilities during multi-ship tactical operations
CRM and crew coordination during multi-ship tactical operations
Cabin configuration
ICS procedures
Escort integration, i.e. Battle Positions
Sectors of fire consideration for entire flight
Section Responsibilities, i.e. free/engaged aircraft
Operations in LZ
ICS procedures/failure
Situational awareness
Communication

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:
Effects of ambient lighting on night systems in an urban area
Obstacle clearance in urban area
Scan techniques in urban area, i.e. dense vegetation scan

Practice:
CC vs. AO responsibilities during multi-ship tactical operations
CRM and crew coordination during multi-ship tactical operations
Cabin configuration
ICS procedures

Escort integration, i.e. Battle Positions
Sectors of fire consideration for entire flight
Section Responsibilities, i.e. free/engaged aircraft
Operations in LZ
Situational awareness
Communication

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

3.13 MISSION PLUS SKILL PHASE (4000)

3.13.1 Purpose: To plan, brief, and execute Mission Plus events in a low to medium threat environment.

3.13.1.1 General:

(a) 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 that is proficient in that Mission Plus Skill. Mission Plus Skill events should be given to all those aircrew (Pilots, Crew Chief, AO) 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.

(b) 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, 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 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.

(c) Prior to the commencement of this phase, aircrew under instruction shall be NSQ-LLL and AGQ.

(d) 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.

(e) Multiple Mission Skill and Mission Plus Skill training events may be logged per sortie (e.g. EXP-3240, AT-3340, AD-3540, RAID-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 (e.g. for pilots: EXP-3240, AT-3340, AD-3540, RAID-4980, ADGR-4981, LLL-2930, EXT-2430, EXT-2440, EXT-2441 and LLL-2331).

(f) 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.

(g) 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.

(h) Initial attempts to complete Mission Skills and Mission Plus Skills should be made in the aircraft, subsequent attempts may be accomplished in the simulator.

(i) As of the signing of this manual, the current HMH Core MCTs are as follows:

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

3.13.1.2 Crew Requirements: P/P/CC/AO

3.13.1.3 Academic Training

(a) 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.

(b) The Mission Plus Skill 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.

3.13.1.4 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/AO
Qualification: NSQ LLL, AGQ

3.13.1.5 Flight Events:

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 3-2, 3-11.4, 3-24, MCRP 3-11.4A)

Requirement: Conduct a rapid insertion/extraction operation utilizing fast rope, rappelling, paraops, 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

Introduce: Tactical airborne rapid insert/extract operations in a low to medium threat environment

Practice:
- CC vs. AO responsibilities during RIE operations
- CRM and crew coordination during RIE operations
- Cabin configuration
- ICS procedures
- Situational awareness
- Communication

Performance Standard: Plan, brief and execute a tactical airborne rapid insertion/extraction mission. If a L-Hour is utilized arrive in the LZ +/- 30 sec in the best position to support the ground combat element. Execute an approach and hover within +/- 5' of intended altitude and within 10' of intended spot and/or fly with +/- 50' of designated altitude and +/- 5 kts of designated airspeed.

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 paraops 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: Suitable CAL/MAL site.

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 refueler 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:
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:
CC vs. AO responsibilities during tactical ADGR operations
CRM and crew coordination during tactical ADGR operations
Cabin configuration
ICS procedures
Installation of TBFDS
FARP operations
Situational awareness
Communication

Performance Standard: Plan, brief and execute a tactical 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: 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 (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 3-2)

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.

Discuss:
- Same as FCLP-2743
- Deck cycles
- 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.

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: Live fire range as required.

External Syllabus Support: Ship or FCLP pad as required.

3.14 INSTRUCTOR TRAINING PHASE (5000)

3.14.1 Purpose: This phase contains instructor workup and evaluations certification syllabus events.

3.14.2 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.

3.14.3 Academic/Ground Training

3.14.3.1 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.

3.14.3.2 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 starting on Pg 1-183 of this document.

3.14.3.3 2000-6000 classes are located at the MAWTS-1 NIPR website under ASD, CH-53, T&R:
https://vcepub.tecom.usmc.mil/sites/msc/magtftc/mawts1/

3.14.3.4 SIPR 2000-6000 classes are located at the MAWTS-1 SIPR website under ASD, CH-53, T&R:
http://www.mawts1.usmc.smil.mil/

3.14.4 Fleet Replacement Squadron Instructor CH-53E

3.14.4.1 Purpose: To develop proficiency in instructional procedures and techniques to support CC training.

3.14.4.2 General:

(a) 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.

(b) 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.

(c) FRSI-5107 can be flown in conjunction with any Core Skill Introduction phase event.

3.14.5 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

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) E 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

Ordnance: N/A

External Syllabus Support: As required

3.14.6 FLEET SQUADRON INSTRUCTORS:

AGI 5400-5408	See MAWTS-1 Course Catalog
NSFI 5600-5602	See MAWTS-1 Course Catalog
TERFI 5700-5701	See MAWTS-1 Course Catalog
DMI 5800-5802	See MAWTS-1 Course Catalog
NSI 5900-5902	See MAWTS-1 Course Catalog

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

3.15.1 CH-53 NATOPS POI

3.15.1.1 Purpose: To evaluate aircrew knowledge of aircraft systems, performance limitations, emergency procedures, flight and ground operations IAW OPNAV 3710.7 and CH-53 NATOPS.

3.15.1.2 General:

(a) 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 OPNAV 3710.7 series and other applicable directives, instructions, and orders.

(b) 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 aircrew completed the sortie.

(c) 6100 is an annual flight requirement per OPNAVINST 3710.7 and the CH-53 NATOPS Manual. 6100 is the initial check ride for an AO to be designated.

(d) Aircrew shall complete and have a graded open book, closed book, and oral evaluation prior to the commencement of the flight event.

3.15.1.3 Crew Requirements: P/P/CC/AO (as required)

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

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

Goal: Open book written examination to evaluate the airman's NATOPS knowledge IAW 3710.

Performance Standard: IAW OPNAV 3710

NTPS-6001 1.0 365 B,R,M * E Closed Book Examination

Goal: Closed book written examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53 NATOPS.

Performance Standard: IAW OPNAV 3710 and CH-53 NATOPS

Prerequisites: NTPS-6000.

NTPS-6002 2.0 365 B,R,M * E Oral Examination

Goal: Oral examination to evaluate the airman's NATOPS knowledge IAW 3710 and CH-53 NATOPS.

Requirement:

Instructor: NATOPS Instructor or Assistant NATOPS Instructor required

Performance Standard: IAW OPNAV 3710 and CH-53 NATOPS

Prerequisites: NTPS-6001

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

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 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 AO as applicable.

Prerequisites: NTPS-6002

External Syllabus Support: As required

3.15.2 CRM Training

3.15.2.1 Purpose: To conduct annual CRM training

3.15.2.2 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.

3.15.2.3 Crew Requirements: P/P/CC/AO (as required)

3.15.2.4 Ground Academic Training. Annual CH-53 CRM Ground Training IAW CH-53 NATOPS, OPNAV 3710.7 and OPNAVINST 1542.7.

CRM-6003	1.5	365	B,R,M	*	E	*	CRM Class

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

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

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, OPNAV 3710.7, OPNAVINST 1542.7.

Prerequisite: CRM-6003

3.16 GRADUATE LEVEL COURSES

3.16.1 There are 5 graduate level courses that certify CCIs for tactical portions of the T&R syllabus. These courses are as follows:

(a) Crew Chief Aerial Gunnery Instructor (AGI)

(b) Crew Chief Terrain Flight Instructor (TERFI)

(c) Crew Chief Defensive Measures Instructor (DMI)

(d) Crew Chief Night Systems Instructor (NSI)

(e) Crew Chief Weapons and Tactics Instructor (WTI Sec MOS 6177)

3.16.2The above courses and applicable training syllabi are listed in the current MAWTS-1 Course Catalog. There will be no re-fly requirement for these instructor flights. 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.

3.17 The following pages contain CH-53E CREW CHIEF T&R MATRIX (1000 & 5000 PHASE)

CH-53E CREW CHIEF T&R MATRIX (1000 and 5000 PHASE)																					
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																					
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	SC	FRST	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	PREREQ NOTES	EVENT CONV
ACAD	CBT	0100	(U) CH-53E HISTORY	X			X	X		1.0						G		*	0200		0100
	CBT	0102	(U) INTERIOR FAM	X			X	X		1.0						G		*	0100		0102
	CBT	0103	(U) EXTERIOR FAM	X			X	X		1.0						G		*	0102		0103
	CBT	0118	(U) APP OPERATION	X			X	X		1.5						G		*	0103		0118
	CBT	0119	(U) AFCS	X			X	X		1.0						G		*	0103		0119
	CBT	0120	(U) BLADE SPREAD/FOLD	X			X	X		1.0						G		*	0103		0120
	CBT	0124	(U) EMERGENCY PROCEDURES	X			X	X		1.0						G		*	0103		0124
	CBT	0126	(U) TAXI / TAKEOFF	X			X	X		1.0						G		*	0103		0126
	CBT	0130	(U) INTERNAL CARGO HANDLING	X			X	X		1.0						G		*	0103		0130
	CBT	0190	(U) BEARING MONITOR SYSTEM	X			X	X		1.0						G		*			0190
	ACAD	0200	(U) COURSE INTRODUCTION BRIEF	X			X	X		2.0						G		*		CHECK-IN	0200
	ACAD	0201	(U) BASIC GROUND HANDLING	X			X	X		1.5						G		*	0103		0201
	ACAD	0202	(U) AIRCRAFT INTERIOR	X			X	X		1.0						G		*	0201		0202
	ACAD	0203	(U) ELECTRONICS COMPARTMENTS	X			X	X		1.5						G		*	0201		0203
	ACAD	0204	(U) LANDING GEAR	X			X	X		1.0						G		*	0201		0204
	ACAD	0205	(U) REFUEL, AUX TANKS	X			X	X		1.5						G		*	0201		0205
	ACAD	0206	(U) ENGINES	X			X	X		1.5						G		*	0201		0206
	ACAD	0207	(U) AFT MAIN ROTOR PYLON	X			X	X		1.5						G		*	0201		0207
	ACAD	0208	(U) TAIL DRIVE SHAFTS	X			X	X		1.0						G		*	0201		0208
	ACAD	0209	(U) TAIL SKID,	X			X	X		1.5						G		*	0201		0209
	ACAD	0210	(U) TAIL ROTOR HEAD	X			X	X		1.0						G		*	0201		0210
	ACAD	0211	(U) MGB	X			X	X		1.5						G		*	0201		0211
	ACAD	0212	(U) 2ND STAGE, UTILITY HYD	X			X	X		1.5						G		*	0201		0212
	ACAD	0213	(U) APP OPERATION	X			X	X		1.5						G		*	0201		0213
	ACAD	0214	(U) MAIN ROTOR HEAD & BLADES	X			X	X		1.0						G		*	0201		0214
	ACAD	0215	(U) MISSION SYSTEMS	X			X	X		1.0						G		*	0201,0130		0215
	ACAD	0216	(U) TURNAROUND INSPECTION	X			X	X		1.0						G		*	0201		0216
	ACAD	0217	(U) REFUELING AND DEFUELING	X			X	X		1.0						G		*	0201		0217
	ACAD	0218	(U) APP OPERATION	X			X	X		1.0						G		*	0201,0118		0218
	ACAD	0219	(U) FLIGHT CONTROLS, AFCS	X			X	X		1.0						G		*	0201,0119		0219

CH-53E CREW CHIEF T&R MATRIX (1000 and 5000 PHASE)																					
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																					
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	SC	FRSI	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	PREREQ NOTES	EVENT CONV
	ACAD	0220	(U) BLADE AND PYLON FOLD	X			X	X		1.0						G		*	0201,0120		0220
	ACAD	0221	(U) PLANE CAPTAIN RESP	X			X	X		2.5						G		*	0201		0221
	ACAD	0222	(U) NATOPS FLIGHT PROCEDURES	X			X	X		4.0						G		*	0201		0222
	ACAD	0223	(U) PRE/POST FLIGHT INSP	X			X	X		4.0						G		*	0201		0223
	ACAD	0224	(U) EGRESS PROCEDURES	X			X	X		4.0						G		*	0201		0224
	ACAD	0225	(U) CRM	X			X	X		2.5						G		*			0225
	ACAD	0226	(U) START UP/SHUT DOWN	X			X	X		1.0						G		*	0126,0201,0222		0226
	ACAD	0227	(U) SINGLE POINT ENGINE	X			X	X		1.0						G		*	0201		0227
	ACAD	0228	(U) T&R MANUAL	X			X	X		1.0						G		*			0228
	ACAD	0229	(U) .50 CALIBER MACHINE GUN	X			X	X		1.0						G		*			0229
	ACAD	0230	(U) CARGO LOADING	X			X	X		1.0						G		*	0130,0201,0215		0230
	ACAD	0270	(U) EXTERNAL TRANSPORTATION	X			X	X		1.0						G		*	0201		0270
	ACAD	0280	(U) TERRAIN FLIGHT MANUVERS	X			X	X		1.0						G		*	0201		0280
	ACAD	0290	(U) AIRCRAFT TRACK AND BAL	X			X	X		2.0						G		*	0227		0290
	ACAD	0291	(U) IMDS	X			X	X		2.0						G		*	0227		0291
	SLAB	0301	(U) BASIC GRD HAND	X			X	X		2.5						G		*	0201		0301
	SLAB	0302	(U) AIRCRAFT INTERIOR	X			X	X		2.5						G		*	0202		0302
	SLAB	0303	(U) ELECTRONICS COMPARTMENTS	X			X	X		1.5						G		*	0203		0303
	SLAB	0304	(U) LANDING GEAR	X			X	X		1.5						G		*	0204		0304
	SLAB	0305	(U) REFUEL, AUX TANKS	X			X	X		1.0						G		*	0205		0305
	SLAB	0306	(U) ENGINES	X			X	X		2.0						G		*	0206		0306
	SLAB	0307	(U) AFT MAIN ROTOR PYLON	X			X	X		1.5						G		*	0207		0307
	SLAB	0308	(U) TAIL DRIVE SHAFTS	X			X	X		1.0						G		*	0208		0308
	SLAB	0309	(U) TAIL SKID	X			X	X		1.5						G		*	0209		0309
	SLAB	0310	(U) TAIL ROTOR HEAD	X			X	X		1.0						G		*	0210		0310
	SLAB	0311	(U) MGB	X			X	X		1.5						G		*	0211		0311
	SLAB	0312	(U) 2ND STAGE, UTILITY HYD	X			X	X		1.5						G		*	0212		0312
	SLAB	0313	(U) APP	X			X	X		1.5						G		*	0213		0313
	SLAB	0314	(U) MAIN ROTOR HEAD	X			X	X		1.5						G		*	0214		0314
	SLAB	0315	(U) MISSION SYSTEMS	X			X	X		1.5						G		*	0215		0315
	SLAB	0316	(U) TURNAROUND INSPECTION	X			X	X		1.5						G		*	0216		0316
	SLAB	0317	(U) REFUELING AND DEFUELING	X			X	X		1.0						G		*	0217		0317

CH-53E CREW CHIEF T&R MATRIX (1000 and 5000 PHASE)																					
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																					
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	SC	FRSI	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	PREREQ NOTES	EVENT CONV
	SLAB	0318	(U) APP OPERATION	X			X	X		1.0						G		*	0218		0318
	SLAB	0319	(U) FLIGHT CONTROLS, AFCS	X			X	X		1.0						G		*	0219		0319
	SLAB	0321	(U) DAILY INSPECTION	X			X	X		4.0						G		*	0221		0321
	SLAB	0322	(U) TURNAROUND INSPECTION	X			X	X		1.0						G		*	0222		0322
	SLAB	0323	(U) FLIGHT EQUIPMENT	X			X	X		1.0						G		*	0223		0323
	SLAB	0324	(U) EGRESS PROCEDURES	X			X	X		1.5						G		*	0224,0323		0324
	FRSI	0500	(U) COMPUTER AIDED INST				X			2.0						G		*		FSIC,BITC	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				X		2.0						G		*	0321,0322		0600
	EVAL	0601	PLANE CAPTAIN REV	X				X		2.0						G		*	0600		0601
									74	112.5	0	0.0	0	0.0							
FAMILIARIZATION (FAM)																					
FAM	FAM	1100	AIRCREW DUTIES	X										1.5	D	A/S	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/S	1	*	1103		1104
	NFAM	1200	NIGHT SYSTEMS FAM	X										1.5	NS	A/S	1	*		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 LOADS (INT)																					
INT	INT	1300	INTERNAL PLANNING	X										1.5	(N)	A/S	1	*	1104		1300
	INT	1301	PASSENGERS/CARGO	X										1.5	(N)	A	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	*	1103		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							

CH-53E CREW CHIEF T&R MATRIX (1000 and 5000 PHASE)																					
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																					
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	SC	FRS1	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	PREREQ NOTES	EVENT CONV
CONFINED AREA LANDING (CAL)																					
CAL	CAL	1600	CONFINED AREA LANDING	X										1.5	D	A/S	1	*			1600
	CAL	1601	SECTION CONFINED AREA LANDING	X										1.5	D	A	2	*	1104,1600		1601
	CAL	1602	NIGHT SYSTEMS (CAL)	X										1.5	NS	A	1	*	1201,1601		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		*	1600		1700
	SEXT	1701	DUAL-POINT EXTERNAL	X								1.5			D	S		*	1700		1701
	EXT	1703	SINGLE-POINT EXTERNAL	X										1.5	D	A	1	*	1601,1702		1703
	EXT	1704	DUAL-POINT EXTERNAL	X										1.5	D	A	1	*	1703		1704
	EXT	1705	(NS) SINGLE-POINT EXTERNAL	X										1.5	NS	A	1	*	1603,1704		1705
	EXT	1706	(NS) DUAL-POINT EXTERNAL	X										1.5	NS	A	1	*	1705		1706
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							
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 SKILL INTRODUCTION CHECKRIDE (CSIX)																					
CSIX	CSIX	1901	STAN CHECK	X										1.5	(NS)	A	1	*	1900		1901
CSIX TOTAL									0	0.0	0	0.0	1	1.5							
TOTAL CORE SKILL INTRODUCTION PHASE									74	112.5	2	3.0	22	34.5							

CH-53E CREW CHIEF T&R MATRIX (1000 and 5000 PHASE)																					
CH-53E CORE SKILL INTRODUCTION T&R MATRIX (1000 PHASE)																					
SKILL	STAGE	TRNG CODE	DESCRIPTION	B	R	SC	FRSI	CIUT	#	ACAD	#	SIM	#	FLT	CON	DEVIC	#	REFLY	PREREQUISITE	PREREQ NOTES	EVENT CONV
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	*	5100		5101
	FRSI	5102	DAY CAL	X										1.5	D	A	1	*			5102
	FRSI	5103	NIGHT CAL	X										1.5	NS	A	1	*	5102		5103
	FRSI	5104	DAY TERF	X										1.5	D	A	1	*			5104
	FRSI	5105	DAY EXT	X										1.5	D	A	1	*	5102		5105
	FRSI	5106	NIGHT EXT	X										1.5	NS	A	1	*	5105		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	*	SEE CC		5600
	NSFI	5601	HLL FORM/SECTION CALS	X										1.5	NS	A	2	*	SEE CC		5601
	NSFI	5602	HLL EXT	X										1.5	NS	A	1	*	SEE CC		5602
NSFI TOTAL									0	0.0	0	0.0	3	4.5							

3.18 CH-53E CREW CHIEF ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)

CH-53E CREW CHIEF ATTAIN AND MAINTAIN MATRIX (1000-8000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
2000 PHASE - CORE SKILL BASIC									
ACADEMICS (ACAD)									
ACAD	ACAD	AAR / ALE 47	2004				*		
	ACAD	APR-39	2012				*		
	ACAD	AAQ-24	2019				*		
	ACAD	TAC AIRCREW CON	2050				*		
	ACAD	EA TERF	2051				*		
	ACAD	EA NS TRAINING	2052				*		
	ACAD	AERIAL GUNNERY	2053				*		
	ACAD	EA GAU-21	2055				*		
	ACAD	EA LASER AIMING	2056				*		
	ACAD	LASER BORESIGHT	2057				*		
	ACAD	EA ESCORT OPS	2058				*		
INTERNAL LOADS (INT)									
INT	INT	CARGO LAB	2100	2100			*	2050,2052~N	
	INT	PAX LAB	2101	2100			*	2050,2052~N	
	INT	CARGO	2105	2105		2105	365	2050,2052~N,2100	
	INT	PAX	2106	2106		2106	365	2050,2052~N,2101	
FORMATION (FORM)									
FORM	FORM	DAY FORM	2110	2110		2110	365	2050	
CONFINED AREA LANDING (CAL)									
CAL	CAL	CALS	2210	2210		2210	365	2050	
	CAL	SECTION CALS	2211	2211		2211	365	2110,2210	2110,2210
TERRAIN FLIGHT (TERF)									
TERF	TERF	TERF	2310	2310		2310	365	2050,2051	
	TERF	SECTION TERF	2311	2311		2311	365	2110,2310	2110,2310
EXTERNAL (EXT)									
EXT	EXT	SINGLE POINT	2410	2410		2410	365	2210	2210
	EXT	DUAL POINT	2411	2411		2411	365	2210	2210,2410
	EXT	HLL SINGLE POINT	2420	2420		2420	180	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
GROUND THREAT REACTION (GTR)									
GTR	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
HELICOPTER AIR TO AIR REFUELING (HAAR)									
FCLP	FCLP	DAY FCLP	2710	2710		2710	365	2210	2210

CH-53E CREW CHIEF ATTAIN AND MAINTAIN MATRIX (1000-8000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
	FCLP	NS FCLP	2742	2742		2742	365	2220~NS,2230~LLL,2710	2210,HLL~2220,LLL~2230,2710
AERIAL GUNNERY GAU-21 (AG)									
AG	AG	GAU-21 LAB	2800	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801	2801			*	2056,2057,2800	
	AG	Weapon Proc LAB	2802	2802			*	2801	
	AG	DAY AG	2812	2812		2812	180	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		2813	180	2311,2812	2812
	AG	NIGHT AG	2842	2842		2842	180	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
TACTICS (TAC)									
TAC	TAC	DAY LOW THREAT	2910	2910		2910	365	2058,2211,TERFQ	2106,2110,2210,2211
	TAC	DAY MED THREAT	2911	2911		2911	365	2910	2106,2110,2210,2211,2910
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)									
HLL	HLL	HLL FORM	2120	2120		2120	180	2052,2110	2110
	HLL	HLL CALS	2220	2220		2220	180	2052,2210	2210
	HLL	HLL SEC CALS	2221	2221		2221	180	2120,2211,2220	2110,2120,2210,2211,2220
	HLL	HLL TERF	2320	2320		2320	180	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 STAGE (NS LLL)									
LLL	LLL	LLL CALS	2230	2230		2230	180	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL TERF	2330	2330		2330	180	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
3000 PHASE - MISSION SKILLS									
ACADEMICS (ACAD)									
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 MATRIX (1000-8000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
EXPEDITIONARY (EXP)									
EXP	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	EXP	EXP SHORE BASED OPS	3140	3140		3140	365	NSQ LLL,AGQ	
ASSAULT TRANSPORT (AT)									
AT	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	NEO EXECUTION	3002						
	AT	ASSAULT TRANSPORT	3240	3240		3240	365	NSQ LLL,AGQ,2540,2843,3002	
AERIAL DELIVERY (AD)									
AD	EXT	LLL EXTERNALS	2430	2430		2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	AD	AERIAL DELVIERY	3340	3340		3340	365	NSQ LLL,AGQ,2430,2540	
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)									
TRAP	EXT	LLL EXTERNALS	2430	2430		2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	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 MATRIX (1000-8000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
AERIAL EVACUATION (AE)									
AE	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	(U) CASEVAC	3006				*		
	AE	AERIAL EVACUATION	3540	3540		3540	365	NSQ LLL,AGQ,3006,2540	
4000 PHASE - CORE PLUS									
ACADEMICS (ACAD)									
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				*		
HELICOPTER INSERTION & EXTRACTION (HIE)									
HIE	HIE	HELOCAST	4110	4110		4110	365	TERFQ,2106	2106
	HIE	RAPPEL	4140	4140			*	2210,2920~NS,2930~LLL	2106
	HIE	PARAOPS	4141	4141			*	2920~NS,2930~LLL	2106
AVIATION DELIVERED GROUND REFUELING (ADGR)									
ADGR	ADGR	TBFDS STATIC TRNG	4200	4200			*	2105,4011	
	ADGR	TBFDS OPERATION	4240	4240		4201	365	2105,2210,2920~NS,2930~LLL,4011,4200	2105,2210
TERRAIN FLIGHT EXTERNALS (TERF EXT)									
TERF EXT	TERF EXT	DAY TERF EXTERNALS	4412	4412		4412	365	2310,2410~SINGLE POINT,2411~DUAL POINT	2310,2410~SINGLE POINT,2411~DUAL POINT
	TERF EXT	NS TERF EXTERNALS	4440	4440		4440	180	2320~NS,2420~NS,2330~LLL,2430~LLL,	
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				*	2210,2220~NS,2230~LLL	
CARRIER QUALIFICATION (CQ)									
CQ	CQ	DAY CQ	4711	4711		4711	365	2710	2210,2710
	CQ	NIGHT CQ	4743	4743		4743	365	2742,NSQ-HLL,NSQ-LLL~LLL	2742,HLL~2220,LLL~2230,4711

CH-53E CREW CHIEF ATTAIN AND MAINTAIN MATRIX (1000-8000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
TAIL GUNNERY (TG)									
TG	TG	STATIC TG TRAINING	4800	4800			*	AGQ,4053	
	TG	DAY TG	4810	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	4841		4841	365	2812~D,2842~NS,4810~D,4840~NS	2813~SEC,284~NS SEC,4810~TG,4811~SEC TG,4840~NS TG
TACTICS (TAC)									
TAC	TAC	DIV TAC	4940	4940		4940	365	2911,2920~NS,2930~LLL	2110,2210,2211,2910,2911
	TAC	URBAN TAC	4941	4941		4941	365	2920~NS,2930~LLL	2110,2120,2210,2211,2220,2221,2910,2911,2920
RAID (RAID)									
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		4201	365	2105,2210,2920~NS,2930~LLL,4011,4200	2105,2210
	ADGR	ADGR TACTICS	4981	4981		4981	365	NSQ LLL,AGQ,4240	4240
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,	
INSTRUCTOR TRAINING (5000 PHASE)									
AERIAL GUNNERY INSTRUCTOR (AGI)									
AGI	AGI	AGI STATIC TRNG	5400	5400			*	SEE COURSE CATALOG	
	AGI	AGI STATIC TRNG	5401	5401			*	SEE COURSE CATALOG	
	AGI	AGI STATIC TRNG	5402	5402			*	SEE COURSE CATALOG	
	AGI	DAY MTG	5403				*	SEE COURSE CATALOG	
	AGI	NS SEC AG	5404				*	SEE COURSE CATALOG	
	AGI	DAY SEC TG	5405				*	SEE COURSE CATALOG	
	AGI	NS SEC TG	5406				*	SEE COURSE CATALOG	
	AGI	NS SEC AG	5407	5407			*	SEE COURSE CATALOG	
	AGI	NS SEC TG	5408	5408			*	SEE COURSE CATALOG	

CH-53E CREW CHIEF ATTAIN AND MAINTAIN MATRIX (1000-8000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
TERRAIN FLIGHT INSTRUCTOR (TERFI)									
TERFI	TERFI	DAY TERF/NAV/EXT	5700	5700			*	SEE COURSE CATALOG	
	TERFI	NS SEC TERF/NAV	5701	5701			*	SEE COURSE CATALOG	
DEFENSIVE MEASURES INSTRUCTOR (DMI)									
DMI	DMI	2 V GRND THREAT	5800				*	SEE COURSE CATALOG	
	DMI	2 V FW/RW	5801				*	SEE COURSE CATALOG	
	DMI	2 V FW/RW	5802	5802			*	SEE COURSE CATALOG	
NIGHT SYSTEMS INSTRUCTOR (NSI)									
NSI	NSI	NS FAM/CAL/EXT	5900				*	SEE COURSE CATALOG	
	NSI	NS SEC CALS/TERF	5901				*	SEE COURSE CATALOG	
	NSI	NS SEC CALS/TERF/EXT/TAC	5902	5902			*	SEE COURSE CATALOG	
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)									
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	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	

3.19 CH-53E CREW CHIEF T&R MATRIX (2000-6000 Phase)

CH-53E CREW CHIEF T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
2000 PHASE - CORE SKILL BASIC																				
ACADEMICS (ACAD)																				
ACAD	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 TACTICAL 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	2057	(U) EA LASER BORESIGHTING	X					1.0						G		*			2057
	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	INT	2100	CARGO LAB	X	X						0.0			(N)	A	1	*			2100
	INT	2101	PAX LAB	X	X						0.0			(N)	A	1	*			2101
	INT	2105	CARGO	X	X		X						1.5	(N)	A	1	365			2105
	INT	2106	PAX	X	X		X						1.5	(N)	A	1	365			2106
INT TOTAL								0	0.0	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	X		X						1.5	D	A	1	365			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							
TERRAIN FLIGHT (TERF)																				
TERF	TERF	2310	TERF	X	X		X						1.5	D	A	1	365			2310
	TERF	2311	SECTION TERF	X	X		X						1.5	D	A	2	365	E		2311
TERF TOTAL								0	0.0	0	0.0	2	3.0							
EXTERNAL (EXT)																				
EXT	EXT	2410	SINGLE POINT	X	X		X						1.5	D	A	1	365			2410
	EXT	2411	DUAL POINT	X	X		X						1.5	D	A	1	365			2411
	EXT	2420	HLL SINGLE POINT	X	X		X						1.5	NS	A	1	180			2420
	EXT	2421	HLL DUAL POINT	X	X		X						1.5	NS	A	1	180			2421
	EXT	2430	LLL EXTERNALS	X	X		X						1.5	NS	A	1	180			2430
EXT TOTAL								0	0.0	0	0.0	5	7.5							

CH-53E CREW CHIEF T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
GROUND THREAT REACTION (GTR)																				
GTR	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	2	365			2540
GTR TOTAL								0	0.0	0	0.0	1	1.5							
HELICOPTER AIR TO AIR REFUELING (HAAR)																				
FCLP	FCLP	2710	DAY FCLP	X	X		X						1.5	D	A	1	365			2710
	FCLP	2742	NS FCLP	X	X		X						1.5	NS	A	1	365			2742
FCLP TOTAL								0	0.0	0	0.0	2	3.0							
AERIAL GUNNERY GAU-21 (AG)																				
AG	AG	2800	GAU-21 LAB	X	X				3.0					D	G	1	*			N/A
	AG	2801	GAU-21 MWPC LAB	X	X				2.0					D	G	1	*			N/A
	AG	2802	Weapon Procedures LAB	X	X				2.0					D	G	1	*			N/A
	AG	2812	DAY AG	X	X		X						1.5	D	A	1	180			2812
	AG	2813	DAY SEC AG	X	X		X						1.5	D	A	2+	180			2813
	AG	2842	NIGHT AG	X	X		X						1.5	NS	A	1	180			2842
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180	E		2843
AG TOTAL								3	7.0	0	0.0	4	6.0							
TACTICS (TAC)																				
TAC	TAC	2910	DAY LOW THREAT	X	X		X						2.0	D	A	2	365			2910
	TAC	2911	DAY MED THREAT	X	X		X						2.0	D	A	2	365			2911
TOTAL TAC STAGE								0	0.0	0	0.0	2	4.0							
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)																				
HLL	HLL	2120	HLL FORM	X	X		X						1.5	NS	A	2	180			2120
	HLL	2220	HLL CALS	X	X		X						1.5	NS	A	1	180			2220
	HLL	2221	HLL SEC CALS	X	X		X						1.5	NS	A	2	180			2221
	HLL	2320	HLL TERF	X	X		X						1.5	NS	A	1	180			2320
	HLL	2321	HLL SEC TERF	X	X		X						1.5	NS	A	2	180			2321
	HLL	2920	HLL LOW THREAT	X	X		X						2.0	NS	A	2	365	E		2920
TOTAL NS HLL STAGE								0	0.0	0	0.0	6	9.5							
NIGHT SYSTEMS LOW LIGHT LEVEL STAGE (NS LLL)																				
LLL	LLL	2230	LLL CALS	X	X		X						1.5	NS	A	1	180			2230
	LLL	2231	LLL SEC CALS	X	X		X						1.5	NS	A	2	180			2231
	LLL	2330	LLL TERF	X	X		X						1.5	NS	A	1	180			2330
	LLL	2331	LLL SEC TERF	X	X		X						1.5	NS	A	2	180			2331
	LLL	2930	LLL MED THREAT	X	X		X						2.0	NS	A	2+	365	E		2930
TOTAL NS LLL STAGE								0	0.0	0	0.0	5	8.0							
CORE SKILL PHASE TOTAL								**14**	**18.0**	**2**	**0.0**	**32**	**50.0**							

CH-53E CREW CHIEF T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
3000 PHASE - MISSION SKILLS																				
ACADEMICS (ACAD)																				
ACAD	ACAD	3002	(U) NEO EXECUTION	X					0.8						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	3.1	0	0.0	0	0.0							
EXPEDITIONARY (EXP)																				
EXP	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	EXP	3140	EXP SHORE BASED OPS	X	X		X						2.0	(NS)	A	1+	365			3140
EXP TOTAL								0	0.0	0	0.0	1	2.0							
ASSAULT TRANSPORT (AT)																				
AT	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	ACAD	3002	NEO EXECUTION	X					1.5											3002
	AT	3240	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	EXT	2430	LLL EXTERNALS	X	X		X							NS	A	1	180			2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	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	EXT	2430	LLL EXTERNALS	X	X		X							NS	A	1	180			2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	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	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
AERIAL EVACUATION (AE)																				
AE	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	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								4	3.8	0	0.0	5	10.0							
4000 PHASE - CORE PLUS																				
ACADEMICS (ACAD)																				
ACAD	ACAD	4011	(U) EA ADGR	X					1.0						G		*			4011
	ACAD	4050	(U) EA ELECTRONIC 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	365			4110
	HIE	4140	RAPPEL	X	X		X						1.5	(NS)	A	1	365			4140
	HIE	4141	PARAOPS	X	X		X						1.5	(NS)	A	1	365			4141
HIE TOTAL								0	0.0	0	0.0	3	4.5							
AVIATION DELIVERED GROUND REFUELING (ADGR)																				
ADGR	ADGR	4200	TBFDS STATIC TRAINING	X	X	X							1.5	D	A		*			4200
	ADGR	4240	TBFDS OPERATION	X	X		X						1.5	(NS)	A	1	365			4201
ADGR TOTAL								0	0.0	0	0.0	2	3.0							
TERRAIN FLIGHT EXTERNALS (TERF EXT)																				
TERF EXT	TERF EXT	4412	DAY TERF EXTERNALS	X	X		X						1.5	D	A	1	365			4412
	TERF EXT	4440	NS TERF EXTERNALS	X	X		X						1.5	NS	A	1	180			4440
T								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	E		4510
	DM	4511	FW DM	X	X		X						1.5	D	A	2	365	E		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							1.5			(NS)	S/A		*			4640
CBRN TOTAL								0	0.0	1	1.5	0	0.0							

CH-53E CREW CHIEF T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
CARRIER QUALIFICATION (CQ)																				
CQ	CQ	4711	DAY CQ	X	X		X						1.5	D	A	1	365			4711
	CQ	4743	NIGHT CQ	X	X		X						1.5	NS	A	1	365			4743
CQ TOTAL								0	0.0	0	0.0	2	3.0							
TAIL GUNNERY (TG)																				
TG	TG	4800	STATIC TG TRAINING	X	X				1.5					D	A	1	*			4800
	TG	4810	DAY TG	X	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	E		4840
TG TOTAL								1	1.5	0	0.0	3	4.5							
MOVING TARGET GUNNERY (MTG)																				
MTG	MTG	4841	MTG	X	X		X						1.5	(NS)	A	1+	365			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							
RAID (RAID)																				
RIE	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	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
RAID TOTAL								0	0.0	0	0.0	3	5.0							
AVIATION DELIVERED GROUND REFUELING (ADGR)																				
ADGR	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	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			4201
	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							
SEA	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	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							
TOTAL CORE PLUS PHASE								6	6.5	1	1.5	28	44.5							

CH-53E CREW CHIEF T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
INSTRUCTOR TRAINING (5000 PHASE)																				
AERIAL GUNNERY INSTRUCTOR (AGI)																				
AGI	AGI	5400	AGI STATIC TRAINING	X	X				3.0					D	A	1	*			N/A
	AGI	5401	AGI STATIC TRAINING	X	X				1.0					D	A	1	*			N/A
	AGI	5402	AGI STATIC TRAINING	X	X				3.0					D	A	1	*			N/A
	AGI	5403	DAY MTG	X									1.5	D	A	1+	*			5412
	AGI	5404	NS SEC AG	X									1.5	NS	A	2	*			N/A
	AGI	5405	DAY SEC TG	X									1.5	NS	A	2	*			5431
	AGI	5406	NS SEC TG	X									1.5	NS	A	2	*			5413
	AGI	5407	NS SEC AG	X	X								1.5	NS	A	2	*	E		N/A
	AGI	5408	NS SEC TG	X	X								1.5	NS	A	2	*	E		N/A
AGI TOTAL								3	7.0	0	0.0	6	9.0							
TERRAIN FLIGHT INSTRUCTOR (TERFI)																				
TERFI	TERFI	5700	DAY TERF/NAV/EXT	X	X								2.0	D	A	1	*	E		5700
	TERFI	5701	NS SECTION TERF/NAV	X	X								2.0	NS	A	2	*	E		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	*	E		5802
DMI TOTAL								0	0.0	0	0.0	3	5.0							
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	*	E		5902
NSI TOTAL								0	0.0	0	0.0	3	6.0							
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)																				
NATOPS (NTPS)																				
NTPS	NTPS	6000	OPEN BOOK EXAM	X	X		X		3.0						G		365	X	X	6000
	NTPS	6001	CLOSED BOOK EXAM	X	X		X		1.0						G		365	X	X	6001
	NTPS	6002	ORAL EXAM	X	X		X		2.0						G		365	X	X	6002
	NTPS	6100	NATOPS EVALUATION FLIGHT	X	X		X						1.5	(NS)	A	1	365	X	X	6100
NTPS TOTAL								3	6.0	0	0.0	1	1.5							
CRM																				
CRM	CRM	6003	CRM GRND CLASS	X	X		X		1.5								365	X	X	6003
	CRM	6101	CRM FLT	X	X		X						1.5	(NS)	A	1	365	X	X	6101
CRM TOTAL								1	1.5	0	0.0	1	1.5							

3.20 AIRCREW PERFORMANCE RECORD/ QUALIFICATION JACKET ACEDEMIC 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-0102	(U) INTERIOR FAMILIARIZATION			
CBT-0103	(U) EXTERIOR FAMILIARIZATION			
CBT-0118	(U) APP OPERATION			
CBT-0119	(U) AFCS			
CBT-0120	(U) BLADE SPREAD/FOLD PROCEDURES			
CBT-0124	(U) EMERGENCY PROCEDURES			
CBT-0126	(U) TAXI / TAKEOFF / IN-FLIGHT CHECKS & PROCEDURES			
CBT-0130	(U) INTERNAL CARGO HANDLING			
CBT-0190	(U) BEARING MONITOR SYSTEM			
ACAD-0200	(U) COURSE INTRODUCTION BRIEF			
ACAD-0201	(U) BASIC GROUND HANDLING AND AIRCRAFT MOVEMENT			
ACAD-0202	(U) AIRCRAFT INTERIOR			
ACAD-0203	(U) ELECTRONICS COMPARTMENTS			
ACAD-0204	(U) LANDING GEAR			
ACAD-0205	(U) REFUEL, AUX TANKS, L/R FUSELAGE			
ACAD-0206	(U) ENGINES, NOSE GEAR BOX, EAPS			
ACAD-0208	(U) TAIL DRIVE SHAFTS			
ACAD-0209	(U) TAIL SKID, IGB, TGB, TAIL SERVO			
ACAD-0210	(U) TAIL ROTOR HEAD, ROTOR BLADES			
ACAD-0211	(U) MGB, FLIGHT CONTROL MIXER UNIT			

ACAD-0212	(U) 2ND STAGE, UTILITY HYDRAULIC			
ACAD-0213	(U) AUXILIARY POWER PLANT			
ACAD-0214	(U) MAIN ROTOR HEAD AND BLADES			

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-0215	(U) MISSION SYSTEMS			
ACAD-0216	(U) TURNAROUND INSPECTION			
ACAD-0217	(U) REFUELING AND DEFUELING			
ACAD-0218	(U) APP OPERATION			
ACAD-0219	(U) FLIGHT CONTROLS, AFCS			
ACAD-0220	(U) BLADE AND PYLON FOLD AND SPREAD PROCEDURES			
ACAD-0221	(U) PLANE CAPTAIN RESPONSIBILITIES			
ACAD-0222	(U) NATOPS FLIGHT PROCEDURES			
ACAD-0223	(U) PRE/POST FLIGHT INSPECTION			
ACAD-0224	(U) EGRESS PROCEDURES			
ACAD-0225	(U) CRM			
ACAD-0226	(U) START UP/SHUT DOWN PROCEDURES			
ACAD-0227	(U) SINGLE POINT ENGINE PLOT/OPERATIONAL POWER CHECK			
ACAD-0228	(U) READINESS MANUAL			
ACAD-0229	(U) .50 CALIBER MACHINE GUN			
ACAD-0230	(U) CARGO LOADING			
ACAD-0270	(U) EXTERNAL TRANSPORTATION			
ACAD-0280	(U) TERRAIN FLIGHT MANUVERS			
ACAD-0290	(U) AIRCRAFT TRACK AND BALANCE			

ACAD-0291	(U) IMDS			

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-0301	(U) BASIC GROUND HANDLING AND AIRCRAFT MOVEMENT			
LAB-0302	(U) AIRCRAFT INTERIOR			
LAB-0303	(U) ELECTRONICS COMPARTMENTS			
LAB-0304	(U) LANDING GEAR			
LAB-0305	(U) REFUEL, AUX TANKS, L/R FUSELAGE			
LAB-0306	(U) ENGINES, NOSE GEAR BOX, EAPS			
LAB-0307	(U) AFT MAIN ROTOR PYLON			
LAB-0308	(U) TAIL DRIVE SHAFTS			
LAB-0309	(U) TAIL SKID, IGB, TGB, TAIL SERVO			
LAB-0310	(U) TAIL ROTOR HEAD, ROTOR BLADES			
LAB-0311	(U) MGB, FLIGHT CONTROL MIXER UNIT			
LAB-0312	(U) 2ND STAGE, UTILITY HYDRAULIC			
LAB-0313	(U) AUXILIARY POWER PLANT			
LAB-0314	(U) MAIN ROTOR HEAD AND BLADES			
LAB-0315	(U) MISSION SYSTEMS			
LAB-0316	(U) TURNAROUND INSPECTION			
LAB-0317	(U) REFUELING AND DEFUELING			
LAB-0318	(U) APP OPERATION			
LAB-0319	(U) FLIGHT CONTROLS, AFCS			

LAB-0321	(U) DAILY INSPECTION			
LAB-0322	(U) TURNAROUND INSPECTION			
LAB-0323	(U) FLIGHT EQUIPMENT			
LAB-0324	(U) EGRESS 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			

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
	ADDITIONAL FRS PHASE ACADEMIC/GROUND CLASSES (0000)	DD/MM/YY	NAME OR SELF PACED	NAME

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-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 cal machine gun			
ACAD-2056	(U) EA Laser aiming devices			
ACAD-2057	(U) EA Laser bore sighting			
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			

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
	ADDITIONAL PHASE ACADEMIC/GROUND CLASSES (2000-8000)	DD/MM/YY	NAME OR SELF PACED	NAME

CHAPTER 4

CH-53 AERIAL OBSERVER (MOS 6199)

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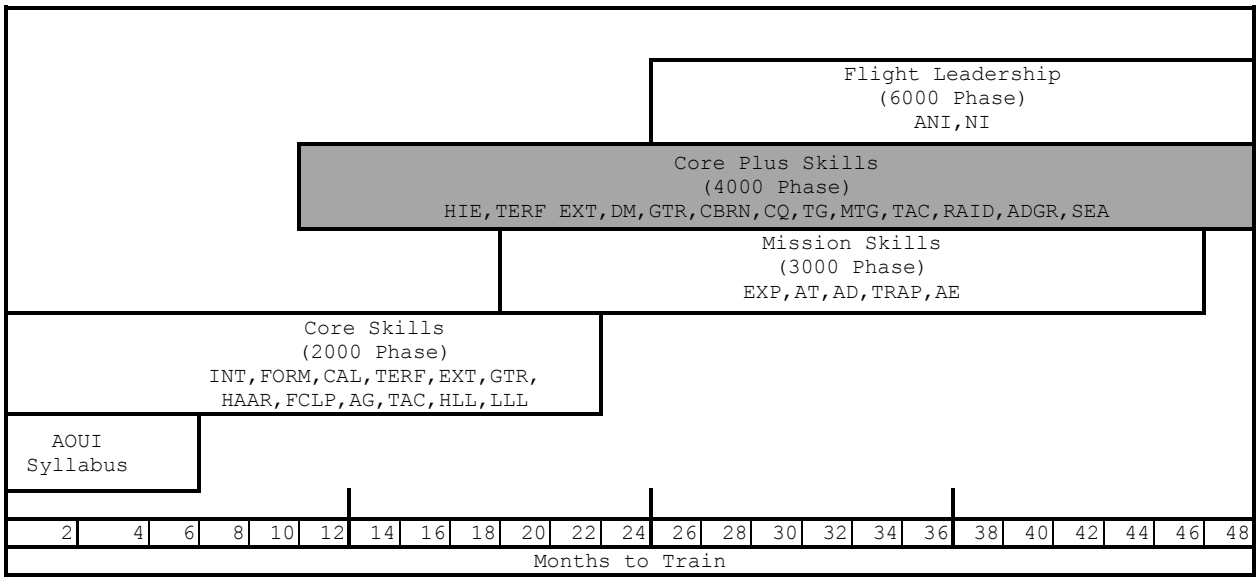
CHAPTER 4

CH-53E AERIAL OBSERVER (MOS 6199)

4.0 AERIAL 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 OBSERVER (6199) TRAINING PROGRESSION MODEL. This model represents the recommended training progression for the average Aerial Observer (6199) crewmember. Units should use the model as a point of departure to generate individual training plans.



4.2 ABBREVIATIONS. Refer to Chapter 3.

4.3 DEFENITIONS. Refer to Chapter 3.

4.4 INDIVIDUAL CORE/MISSION/CORE PLUS SKILL PROFICIENCY REQUIREMENTS

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

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

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

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

Note

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

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

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN PROFICIENCY (2000-4000)						
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	ATTAIN PROFICIENCY		MAINTAIN POI
				BASIC POI	REFRESHER POI	
CORE SKILLS (2000 Phase)						
INT	INT	2100	CARGO LAB	2100	2100	
	INT	2101	PAX LAB	2101	2100	
	INT	2105	CARGO	2105	2105	2105
	INT	2106	PAX	2106	2106	2106
FORM	FORM	2110	DAY FORM	2110	2110	2110
CAL	CAL	2210	CALS	2210	2210	2210
	CAL	2211	SECTION CALS	2211	2211	2211
TERF	TERF	2310	TERF	2310	2310	2310
	TERF	2311	SECTION TERF	2311	2311	2311
EXT	EXT	2410	SINGLE POINT	2410	2410	2410
	EXT	2411	DUAL POINT	2411	2411	2411
	EXT	2420	HLL SINGLE POINT	2420	2420	2420
	EXT	2421	HLL DUAL POINT	2421	2421	2421
	EXT	2430	LLL EXTERNALS	2430	2430	2430
GTR	GTR	2540	NON RADAR GTR	2540	2540	2540
FCLP	FCLP	2710	DAY FCLP	2710	2710	2710
	FCLP	2742	NS FCLP	2742	2742	2742
AG	AG	2800	GAU-21 LAB	2800	2800	
	AG	2801	GAU-21 MWPC LAB	2801	2801	
	AG	2802	Weapon Proc LAB	2802	2802	
	AG	2812	DAY AG	2812	2812	2812
	AG	2813	DAY SEC AG	2813	2813	2813
	AG	2842	NIGHT AG	2842	2842	2842
	AG	2843	NIGHT SEC AG	2843	2843	2843
TAC	TAC	2910	DAY LOW THREAT	2910	2910	2910
	TAC	2911	DAY MED THREAT	2911	2911	2911

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN PROFICIENCY (2000-4000)						
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	ATTAIN PROFICIENCY		MAINTAIN POI
				BASIC POI	REFRESHER POI	
NS HLL	HLL	2120	HLL FORM	2120	2120	2120
	HLL	2220	HLL CALS	2220	2220	2220
	HLL	2221	HLL SEC CALS	2221	2221	2221
	HLL	2320	HLL TERF	2320	2320	2320
	HLL	2321	HLL SEC TERF	2321	2321	2321
	HLL	2920	HLL LOW THREAT	2920	2920	2920
NS LLL	LLL	2230	LLL CALS	2230	2230	2230
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2330	LLL TERF	2330	2330	2330
	LLL	2331	LLL SEC TERF	2331	2331	2331
	LLL	2930	LLL MED THREAT	2930	2930	2930
MISSION SKILLS (3000 Phase)						
EXP	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	EXP	3140	EXP SHORE BASED OPS	3140	3140	3140
AT	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	ACAD	3002	NEO EXECUTION	3002		
	AT	3240	ASSAULT TRANSPORT	3140	3140	3140
AD	EXT	2430	LLL EXTERNALS	2430	2430	2430
	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	AD	3340	AERIAL DELVIERY	3340	3340	3340
TRAP	EXT	2430	LLL EXTERNALS	2430	2430	2430
	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	ACAD	3004	(S) PERSONNEL RECOVERY	3004		
	ACAD	3005	CH53 SPECIFIC TRAP TTPS	3005		
	TRAP	3440	TRAP	3440	3440	3440
AE	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	LLL	2231	LLL SEC CALS	2231	2231	2231
	LLL	2331	LLL SEC TERF	2331	2331	2331
	ACAD	3006	(U) CASEVAC	3006		
	AE	3540	AERIAL EVACUATION	3540	3540	3540
CORE PLUS (4000 Phase)						
HIE	HIE	4110	HELOCAST	4110	4110	4110
	HIE	4140	RAPPEL	4140	4140	4140
	HIE	4141	PARAOPS	4141	4141	4141
ADGR	ADGR	4200	TBFDS STATIC TRAINING	4200	4200	
	ADGR	4240	TBFDS OPERATION	4240	4240	4201
TERF EXT	TERF EXT	4412	DAY TERF EXTERNALS	4412	4412	4412
	TERF EXT	4440	NS TERF EXTERNALS	4440	4440	4440
DM	DM	4510	RW DM	4510	4510	4510
	DM	4511	FW DM	4511	4511	4511
GTR	GTR	4540	RADAR GTR	4540	4540	4540
CBRN	CBRN	4600	CBRN	4600		
CQ	CQ	4711	DAY CQ	4711	4711	4711
	CQ	4743	NIGHT CQ	4743	4743	4743
TG	TG	4800	STATIC TG TRAINING	4800	4800	

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN PROFICIENCY (2000-4000)						
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	ATTAIN PROFICIENCY		MAINTAIN POI
				BASIC POI	REFRESHER POI	
	TG	4810	DAY TG	4810	4810	
	TG	4811	DAY SECTION TG	4811	4811	4811
	TG	4840	NIGHT SECTION TG	4840	4840	4840
MTG	MTG	4841	MTG	4841	4841	4841
TAC	TAC	4940	DIV TAC	4940	4940	4940
	TAC	4941	URBAN TAC	4941	4941	4941
RIE	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	RIE	4980	RIE	4980	4980	4980
ADGR	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	ADGR	4240	TBFDS OPERATION	4240	4240	4201
	ADGR	4981	ADGR TACTICS	4981	4981	4981
SEA	GTR	2540	NON RADAR GTR	2540	2540	2540
	AG	2843	NIGHT SEC AG	2843	2843	2843
	SEA	4982	SEA BASED	4982	4982	4982

4.5 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS AND DESIGNATION TABLES.

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

4.5.1 Individual Qualification Requirements

INDIVIDUAL QUALIFICATION REQUIREMENTS	
Qualification	Event Requirements
TERF	2310,2311
NSQ HLL	2120,2220,2221,2320,2321,2920
NSQ LLL	2230,2231,2330,2331,2930
AG	2800,2801,2802,2812,2813,2842,2843
DM	4510,4511
TG	4810,4811,4840
NATOPS	6100

4.5.2 Individual Designation Requirements

INDIVIDUAL DESIGNATION REQUIREMENTS	
Designation	Event Requirements
AO CH-53E	S2100, S2101, 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
NATOPS	6000R, 6001R, 6002R, 6101R
CRM	6003R, 6101R

4.6 AERIAL OBSERVER 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.

4.6.1 Basic, Conversion, and Transition POI

CH-53E AERIAL OBSERVER Basic POI		
Weeks	Phase of Instruction	Unit
4-12	Aerial Observer Under Instruction (AOUI)	Tactical Squadron
12-24	Core Skill Training	Tactical Squadron
24-36	Mission Skill Training	Tactical Squadron
52+	Core Plus Training	Tactical Squadron

4.6.2 Refresher POI

CH-53E AERIAL OBSERVER Refresher POI		
Weeks	Phase of Instruction	Unit
4-12	Core Skill Training	Tactical Squadron
12-24	Mission Skill Training	Tactical Squadron
52+	Core Plus Training	Tactical Squadron

4.7 SYLLABUS NOTES

4.7.1 AIRCREW TRAINING REFERENCES. Aircrew shall use the following references to ensure safe and standardized training procedures, grading criteria, and aircraft operation.

AICREW TRAINING REFERENCES	
Designator	**Title**
OPNAVINST 3710.7	NATOPS General Flight and Operating Instructions
NAVAIR 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 4-23E	Multiservice helicopter sling load manual

ANTTP 3-22.3-53	CH-53 Air Naval Tactics Techniques and Procedures
ANTTP 3-22.5-ASTACSOP	USMC Assault Support Tactical SOP
ANTTP 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
TBFDS APCL-CH53E	TBFDS Aircrew Pocket Checklist
EA Academic support package	MAWTS-1 EA ASP
EA Instructor support package	MAWTS-1 Course Catalog
GTR program guide	MAWTS-1 Ground Threat Reaction program guide
DM program guide	MAWTS-1 Defensive Measures program guide
NTRP 3-22.4	Naval Aviation Technical Information

4.7.2.1.1 General

4.7.2.2 This Manual is written to allow for local conditions and yet remain unclassified.

4.7.2.3 All events shall terminate with a comprehensive debrief with emphasis on aircrew performance using all evaluation techniques.

4.7.2.4 Aircrew shall fly events annotated with an N at least 30 minutes after official sunset.

4.7.2.5 Aircrew shall fly night events in accordance with the table of acronyms for environmental conditions.

4.7.2.6 The Aerial Observer/Aerial Observer Under Instruction (AO/AOUI) is an assistant to the Crew Chief. 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 a Crew Chief but at no time will their training take precedence over that of a Crew Chief. The following is a list of the general responsibilities that the AO shall assist the Crew Chief in. This list is not all inclusive.

(A) Daily/Turnaround inspections of A/C
(B) Pre-flight inspections/maintenance of A/C
(C) A/C preparation
(D) Weapons preparation
(E) Cabin setup/configuration for mission
(F) Cabin security
(G) A/C startup/shutdown
(H) On/Off load of passenger/cargo
(I) Security of passengers/cargo
(J) Obstacle clearance of left side and tail rotor of A/C
(K) Post-flight inspections/maintenance of A/C

4.7.3 Designation as an Aerial Observer.

4.7.3.1 An individual desiring to become an Aerial Observer (AO) 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 AO syllabus.

4.7.3.2 Once approved by the Commanding Officer the individual will become an Aerial Observer Under Instruction (AOUI) until they are designated as an Aerial Observer (AO). The AOUI will not conduct any of the Core Skill

Introduction phase and will begin training in the Core Skill phase at the tactical unit. The AOUI shall complete all academic and flight training as appropriate per the T&R Program of Instruction (POI).

4.7.3.3 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.

4.7.3.4 The AOUI shall complete the following T&R events per the Individual Designation table prior to flying any T&R events other than those listed below: 2100, 2101, 2105, 2106, 2110, 2120, 2210, 2211, 2220, 2221, 2310, 2311, 2320, 2321, 2410, 2411, 2420, 2421, 2800, 2801, 2802, 2812, 2813, 2842, 2843, 2910, 6000, 6001, 6002, 6003, 6100, 6101.

4.7.3.5 The AOUI shall conduct all above T&R events under the supervision of the appropriate level Crew Chief Instructor per the T&R event.

4.7.3.6 In addition to the Crew Chief Instructor and the AOUI 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 AO. 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.

4.7.3.7 The AOUI shall conduct all events in the AOUI syllabus in the appropriate order per the required prerequisites of the individual T&R events.

4.7.3.8 All events shall be logged appropriately in M-SHARP.

4.7.3.9 All events shall require an ATF filled out and signed by the Crew Chief Instructor for that event and logged in the AOUIs APR jacket.

4.7.3.10 The AOUI shall not complete the 6000 phase events until all other events in the AOUI 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.

4.7.3.11 The AOUI shall not fly any event outside of the AOUI syllabus and act in the capacity of an AO nor fulfill the crew requirement for that event. If the AOUI is scheduled in addition to a qualified crew for any event outside the AOUI syllabus the AOUI shall not act in the capacity of an AO for that portion of the event and shall not log that event.

4.7.3.12 The AOUI will complete the TERF and AG syllabi prior to the initial NTPS-6100. However, the AOUI 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.

4.7.3.13 After successful completion of NTPS-6100, and CRM-6101 the AOUI may be designated an Aerial Observer at the discretion of the Commanding Officer. At this time a designation letter as an Aerial 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 AO’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 AO thru the unit S-1/IPAC.

4.7.3.14 All paperwork shall be properly logged prior to utilizing the newly designated AO as a qualified crewmember (to carry passengers, or without the supervision of the appropriated level Crew Chief Instructor).

4.7.3.15 Once the commanding officer has designated the AOUI as an AO they may be awarded and will be authorized to wear the Naval Aircrew Wings badge.

4.7.3.16 The designated AO 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.

4.7.3.17 The AO shall not conduct any of the Instructor Phase of training and shall hold no instructor qualifications.

4.7.4 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/CPP 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.		

4.7.4.1 Basic, Conversion, and Transition POI. AOs assigned to Basic (B), Conversion (C), and Transition (T) POIs shall fly the entire Basic (B) POI. All events shall have an ATF filled out and signed by the crew chief instructor for that event and shall be logged in section 3 of the individuals APR jacket. The Enlisted Aircrew Training Manager (EATM) shall ensure all ATFs are properly logged within a 24 hour period after completion of the event.

4.7.4.2 Refresher POI. The Refresher (R) POI is predicated on the experience of the Refresher Aerial Observer. Previously designated Aerial Observers 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 my tailor the individual’s Refresher POI per the squadron standardization board recommendations and IAW NAVMC 3500.14. When the (R) coded events within a stage of training are complete, the AO may be credited with the entire stage of training. This assumes the AO has previous proficiency in a stage of training. If the AO has no previous proficiency in a stage or particular event (i.e. event Never Been Attempted (NBA)), then the Refresher AO shall fly the entire stage or all events not previously attempted.

4.7.4.3 Re-Qualification (TERFQ, AGQ, NSQ HLL, NSQ LLL, TGQ, DMQ). Upon demonstration of proficiency, by flying those (R) coded events, IAW the Program Manual NAVMC 3500.14, within the applicable stage in a specific core skill, aircrew may be re-qualified at the discretion of the Squadron Commanding Officer.

4.7.5 Aviation Training Forms (ATF)

4.7.5.1 All 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".

4.7.5.2 All 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".

4.7.5.3 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.

4.7.5.4 All individual instructors shall report to the Enlisted Aircrew Training Manager (EATM) within a 24 hour period and provide them with the completed ATFs for the event. The EATM shall ensure that all ATFs are properly logged in the individual's APR within 48 hours after the event has been completed.

All ATFs shall be logged in section 3 of the individual's APR jacket under the T&R Evaluated Flights tab.

The ATFs shall be logged in order of the "T&R Tracker Table" with the highest numbered T&R code place on top.

All Refresher ATFs shall be logged in the same manner except that they shall all be grouped together and placed on the top of the other ATFs and have the refresher syllabus letter signed by the Squadron Commanding Officer placed on top.

All "UNSATISFACTORY" ATFs shall be logged in the same order and shall remain the individuals APR jacket.

The T&R Tracker Table shall be placed in section 3 of the APR and placed on top of the T&R Evaluated Flights Tab.

4.7.6 Regaining CSP/MSP Proficiency

4.7.6.1 Individual. For an individual to regain proficiency of a single "delinquent event" (i.e. event re-fly interval exceeded) in a Core/Mission/Core Plus Skill, the individual is required to complete that "delinquent event" with another crewmember who is proficient in that event.

NOTE

See NAVMC 3500.14 Chapter 3 for specific requirements in Low Level Flight/TERF, Night Systems, and Air Combat Maneuvering/DM.

4.7.6.2 If all events in the Maintain Table/POI for a Core/Mission/Core Plus Skill are delinquent, the individual must re-fly all delinquent R-coded events in the Attain Table for that Core/Mission/Core Plus Skill.

4.7.7 Unit. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing event(s) with instructors from another like unit; if not feasible, proficiency shall be regained by completing event(s) with another instructor. If a unit has only one instructor and another instructor is not available, instructor proficiency shall be regained as designated by the Squadron Commanding Officer.

4.7.8 Qualifications. Qualifications are assigned to personnel based on demonstration of proficiency in a specific skill (i.e. FORM, CALS, TERF, EXT, HLL, LLL, etc.). All qualifications are assigned one or more T&R qualification events. When all qualifications requirements and events are completed, the individual may be granted the respective qualification by the commanding officer. Proficiency statuses of these qualification events are used to determine qualification status; an individual qualification status may be either "Qualified" or "Not Qualified".

4.7.8.1 Loss of Qualifications. If an individual goes delinquent in all associated qualification events, the qualification is lost and the status automatically reverts to "Not Qualified." Individuals do not lose a qualification as a function of re-fly factor for individual events. Loss of proficiency resulting from being delinquent on all associated qualification events (events with measurable re-fly factor; excluding one-time events '*') constitutes loss of that qualification.

4.7.8.2 Re-Qualification. Re-qualification requires demonstration of proficiency in a specific skill. To regain a lost qualification due to delinquency, the individual must re-complete all R-coded qualifications events. Upon completion, the qualification status automatically reverts back to "Qualified." Normally qualification regained in this manner requires no additional documentation.

4.7.9 Acronyms for crew requirements

Acronyms for Crew Requirements	
Acronym	**Definition**
CC	Crew Chief
AOUI	Aerial Observer Under Instruction
AO	Aerial Observer

4.7.10 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.	

4.7.11 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.
E-Coded	An event evaluation form is required each time the event is logged. Requires evaluation by a certified standardization instructor (NATOPS I, Assistant NATOPS I, WTI, etc.)

4.7.12 Academic Training

4.7.12.1 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 (2000-6000) 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.

4.7.12.2 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.

4.7.12.3 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.

4.7.12.4 The EATM shall manually update the training code in MSHARP.

4.7.12.5 The EATM shall log the academic/ground training event on the Academic Tracker located in Chapter 3 of this manual starting on Pg 1-183.

4.7.12.6 The EATM shall ensure that the Academic Tracker is located in the individuals APR jacket in section 3 under the ground school tab.

4.7.12.7 Additional academic/ground training classes not listed as requirements in the T&R shall be logged on the Additional Academic Tracker located In Chapter 3 of this manual starting on Pg 1-183 and shall be logged in section 3 of the individuals APR jacket under the ground school tab.

4.8 CORE SKILL PHASE (2000). For Individual T&R events refer to Chapter 3 of this manual.

4.9 MISSION SKILL 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 AOs.

4.12 REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS (RQD) PHASE (6000). For Individual T&R events refer to Chapter 3 of this manual

4.13 AERIAL OBSERVER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
2000 PHASE - CORE SKILL BASIC									
ACADEMICS (ACAD)									
ACAD	ACAD	AAR / ALE 47	2004				*		
	ACAD	APR-39	2012				*		
	ACAD	AAQ-24	2019				*		
	ACAD	TAC AIRCREW CON	2050				*		
	ACAD	EA TERF	2051				*		
	ACAD	EA NS TRAINING	2052				*		
	ACAD	AERIAL GUNNERY	2053				*		
	ACAD	EA GAU-21	2055				*		
	ACAD	EA LASER AIMING	2056				*		
	ACAD	LASER BORESIGHT	2057				*		
	ACAD	EA ESCORT OPS	2058				*		
INTERNAL LOADS (INT)									
INT	INT	CARGO LAB	2100	2100			*	2050,2052~~N	
	INT	PAX LAB	2101	2100			*	2050,2052~N	
	INT	CARGO	2105	2105		2105	365	2050,2052~N,2100	
	INT	PAX	2106	2106		2106	365	2050,2052~N,2101	
FORMATION (FORM)									
FORM	FORM	DAY FORM	2110	2110		2110	365	2050	
CONFINED AREA LANDING (CAL)									
CAL	CAL	CALS	2210	2210		2210	365	2050	
	CAL	SECTION CALS	2211	2211		2211	365	2110,2210	2110,2210
TERRAIN FLIGHT (TERF)									
TERF	TERF	TERF	2310	2310		2310	365	2050,2051	
	TERF	SECTION TERF	2311	2311		2311	365	2110,2310	2110,2310
EXTERNAL (EXT)									
EXT	EXT	SINGLE POINT	2410	2410		2410	365	2210	2210
	EXT	DUAL POINT	2411	2411		2411	365	2210	2210,2410
	EXT	HLL SINGLE POINT	2420	2420		2420	180	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
GROUND THREAT REACTION (GTR)									
GTR	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

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
FIELD CARRIER LANDING PRACTICE (FCLP)									
FCLP	FCLP	DAY FCLP	2710	2710		2710	365	2210	2210
	FCLP	NS FCLP	2742	2742		2742	365	2220~NS,2230~LLL,2710	2210,HLL~2220,LLL~2230,2710
AERIAL GUNNERY GAU-21 (AG)									
AG	AG	GAU-21 LAB	2800	2800			*	2055	
	AG	GAU-21 MWPC LAB	2801	2801			*	2056,2057,2800	
	AG	Weapon Proc LAB	2802	2802			*	2801	
	AG	DAY AG	2812	2812		2812	180	2053,2310,2802	
	AG	DAY SEC AG	2813	2813		2813	180	2311,2812	2812
	AG	NIGHT AG	2842	2842		2842	180	2320~NS,2330~LLL,2812	2812
	AG	NIGHT SEC AG	2843	2843		2843	180	2321~NS,2331~LLL,2813,2842	2812,2813,2842
TACTICS (TAC)									
TAC	TAC	DAY LOW THREAT	2910	2910		2910	365	2058,2211,TERFQ	2106,2110,2210,2211
	TAC	DAY MED THREAT	2911	2911		2911	365	2910	2106,2110,2210,2211,2910
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)									
HLL	HLL	HLL FORM	2120	2120		2120	180	2052,2110	2110
	HLL	HLL CALS	2220	2220		2220	180	2052,2210	2210
	HLL	HLL SEC CALS	2221	2221		2221	180	2120,2211,2220	2110,2120,2210,2211,2220
	HLL	HLL TERF	2320	2320		2320	180	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 STAGE (NS LLL)									
LLL	LLL	LLL CALS	2230	2230		2230	180	NSQ HLL	2210,2220
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL TERF	2330	2330		2330	180	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
3000 PHASE - MISSION SKILLS									
ACADEMICS (ACAD)									
ACAD	ACAD	NEO EXECUTION	3002				*		
	ACAD	PERSONNEL REC	3004				*		
	ACAD	CH-53 TRAP TTPS	3005				*		
	ACAD	CASEVAC	3006				*		

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
EXPEDITIONARY (EXP)									
EXP	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	EXP	EXP SHORE BASED OPS	3140	3140		3140	365	NSQ LLL,AGQ	
ASSAULT TRANSPORT (AT)									
AT	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	NEO EXECUTION	3002						
	AT	ASSAULT TRANSPORT	3240	3240		3240	365	NSQ LLL,AGQ,2540,2843,3002	
AERIAL DELIVERY (AD)									
AD	EXT	LLL EXTERNALS	2430	2430		2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	AD	AERIAL DELVIERY	3340	3340		3340	365	NSQ LLL,AGQ,2430,2540	
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)									
TRAP	EXT	LLL EXTERNALS	2430	2430		2430	180	2230,2420,2421, NSQ-HLL	2210,2220,2230,2410,2411,2420,2421
	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	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 ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
AERIAL EVACUATION (AE)									
AE	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
	LLL	LLL SEC CALS	2231	2231		2231	180	2230	2110,2120,2210,2211,2220,2221,2230
	LLL	LLL SEC TERF	2331	2331		2331	180	2330	2110,2120,2310,2311,2320,2321,2330
	ACAD	(U) CASEVAC	3006				*		
	AE	AERIAL EVACUATION	3540	3540		3540	365	NSQ LLL,AGQ,3006,2540	
4000 PHASE - CORE PLUS									
ACADEMICS (ACAD)									
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				*		
HELICOPTER INSERTION & EXTRACTION (HIE)									
HIE	HIE	HELOCAST	4110	4110		4110	365	TERFQ,2106	2106
	HIE	RAPPEL	4140	4140			*	2210,2920~NS,2930~LLL	2106
	HIE	PARAOPS	4141	4141			*	2920~NS,2930~LLL	2106
AVIATION DELIVERED GROUND REFUELING (ADGR)									
ADGR	ADGR	TBFDS STATIC TRNG	4200	4200			*	2105,4011	
	ADGR	TBFDS OPERATION	4240	4240		4201	365	2105,2210,2920~NS,2930~LLL,4011,4200	2105,2210
TERRAIN FLIGHT EXTERNALS (TERF EXT)									
TERF EXT	TERF EXT	DAY TERF EXTERNALS	4412	4412		4412	365	2310,2410~SINGLE POINT,2411~DUAL POINT	2310,2410~SINGLE POINT,2411~DUAL POINT
	TERF EXT	NS TERF EXTERNALS	4440	4440		4440	180	2320~NS,2420~NS,2330~LLL,2430~LLL,	
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				*	2210,2220~NS,2230~LLL	
CARRIER QUALIFICATION (CQ)									
CQ	CQ	DAY CQ	4711	4711		4711	365	2710	2210,2710
	CQ	NIGHT CQ	4743	4743		4743	365	2742,NSQ-HLL,NSQ-LLL~LLL	2742,HLL~2220,LLL~2230,4711

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
TAIL GUNNERY (TG)									
TG	TG	STATIC TG TRAINING	4800	4800			*	AGQ,4053	
	TG	DAY TG	4810	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	4841		4841	365	2812~D,2842~NS,4810~D,4840~NS	2813~SEC,284~NS SEC,4810~TG,4811~SEC TG,4840~NS TG
TACTICS (TAC)									
TAC	TAC	DIV TAC	4940	4940		4940	365	2911,2920~NS,2930~LLL	2110,2210,2211,2910,2911
	TAC	URBAN TAC	4941	4941		4941	365	2920~NS,2930~LLL	2110,2120,2210,2211,2220,2221,2910,2911,2920
RAID (RAID)									
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	

CH-53E AERIAL OBSERVER ATTAIN AND MAINTAIN MATRIX (2000-6000 PHASE)									
SKILL	STAGE	DESCRIPTION	BASIC POI	REFRESHER POI	SERIES CONV POI	MAINTAIN POI	REFLY	PREREQUISITE	CHAINING
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		4201	365	2105,2210,2920~NS,2930~LLL,4011,4200	2105,2210
	ADGR	ADGR TACTICS	4981	4981		4981	365	NSQ LLL,AGQ,4240	4240
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,	
INSTRUCTOR TRAINING (5000 PHASE)									
AERIAL GUNNERY INSTRUCTOR (AGI)									
AGI	AGI	AGI STATIC TRNG	5400	5400			*	SEE COURSE CATALOG	
	AGI	AGI STATIC TRNG	5401	5401			*	SEE COURSE CATALOG	
	AGI	AGI STATIC TRNG	5402	5402			*	SEE COURSE CATALOG	
	AGI	DAY MTG	5403				*	SEE COURSE CATALOG	
	AGI	NS SEC AG	5404				*	SEE COURSE CATALOG	
	AGI	DAY SEC TG	5405				*	SEE COURSE CATALOG	
	AGI	NS SEC TG	5406				*	SEE COURSE CATALOG	
	AGI	NS SEC AG	5407	5407			*	SEE COURSE CATALOG	
	AGI	NS SEC TG	5408	5408			*	SEE COURSE CATALOG	
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)									
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	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 AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)

CH-53E AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
2000 PHASE - CORE SKILL BASIC																				
ACADEMICS (ACAD)																				
ACAD	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 TACTICAL 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	2057	(U) EA LASER BORESIGHTING	X					1.0						G		*			2057
	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	INT	2100	CARGO LAB	X	X						0.0			(N)	A	1	*			2100
	INT	2101	PAX LAB	X	X						0.0			(N)	A	1	*			2101
	INT	2105	CARGO	X	X		X						1.5	(N)	A	1	365			2105
	INT	2106	PAX	X	X		X						1.5	(N)	A	1	365			2106
INT TOTAL								0	0.0	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	X		X						1.5	D	A	1	365			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							
TERRAIN FLIGHT (TERF)																				
TERF	TERF	2310	TERF	X	X		X						1.5	D	A	1	365			2310
	TERF	2311	SECTION TERF	X	X		X						1.5	D	A	2	365	E		2311
TERF TOTAL								0	0.0	0	0.0	2	3.0							
EXTERNAL (EXT)																				
EXT	EXT	2410	SINGLE POINT	X	X		X						1.5	D	A	1	365			2410
	EXT	2411	DUAL POINT	X	X		X						1.5	D	A	1	365			2411
	EXT	2420	HLL SINGLE POINT	X	X		X						1.5	NS	A	1	180			2420
	EXT	2421	HLL DUAL POINT	X	X		X						1.5	NS	A	1	180			2421
	EXT	2430	LLL EXTERNALS	X	X		X						1.5	NS	A	1	180			2430
EXT TOTAL								0	0.0	0	0.0	5	7.5							

CH-53E AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
GROUND THREAT REACTION (GTR)																				
GTR	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	2	365			2540
GTR TOTAL								0	0.0	0	0.0	1	1.5							
HELICOPTER AIR TO AIR REFUELING (HAAR)																				
FCLP	FCLP	2710	DAY FCLP	X	X		X						1.5	D	A	1	365			2710
	FCLP	2742	NS FCLP	X	X		X						1.5	NS	A	1	365			2742
HAAR TOTAL								0	0.0	0	0.0	2	3.0							
AERIAL GUNNERY GAU-21 (AG)																				
AG	AG	2800	GAU-21 LAB	X	X				3.0					D	G	1	*			N/A
	AG	2801	GAU-21 MWPC LAB	X	X				2.0					D	G	1	*			N/A
	AG	2802	Weapon Procdures LAB	X	X				2.0					D	G	1	*			N/A
	AG	2812	DAY AG	X	X		X						1.5	D	A	1	180			2812
	AG	2813	DAY SEC AG	X	X		X						1.5	D	A	2+	180			2813
	AG	2842	NIGHT AG	X	X		X						1.5	NS	A	1	180			2842
	AG	2843	NIGHT SEC AG	X	X		X						1.5	NS	A	2+	180	E		2843
AG TOTAL								3	7.0	0	0.0	4	6.0							
TACTICS (TAC)																				
TAC	TAC	2910	DAY LOW THREAT	X	X		X						2.0	D	A	2	365			2910
	TAC	2911	DAY MED THREAT	X	X		X						2.0	D	A	2	365			2911
TAC TOTAL								0	0.0	0	0.0	2	4.0							
NIGHT SYSTEM HIGH LIGH LEVEL (HLL)																				
HLL	HLL	2120	HLL FORM	X	X		X						1.5	NS	A	2	180			2120
	HLL	2220	HLL CALS	X	X		X						1.5	NS	A	1	180			2220
	HLL	2221	HLL SEC CALS	X	X		X						1.5	NS	A	2	180			2221
	HLL	2320	HLL TERF	X	X		X						1.5	NS	A	1	180			2320
	HLL	2321	HLL SEC TERF	X	X		X						1.5	NS	A	2	180			2321
	HLL	2920	HLL LOW THREAT	X	X		X						2.0	NS	A	2	365	E		2920
NS HLL TOTAL								0	0.0	0	0.0	6	9.5							
NIGHT SYSTEMS LOW LIGHT LEVEL STAGE (NS LLL)																				
LLL	LLL	2230	LLL CALS	X	X		X						1.5	NS	A	1	180			2230
	LLL	2231	LLL SEC CALS	X	X		X						1.5	NS	A	2	180			2231
	LLL	2330	LLL TERF	X	X		X						1.5	NS	A	1	180			2330
	LLL	2331	LLL SEC TERF	X	X		X						1.5	NS	A	2	180			2331
	LLL	2930	LLL MED THREAT	X	X		X						2.0	NS	A	2+	365	E		2930
NS LLL TOTAL								0	0.0	0	0.0	5	8.0							
CORE SKILL PHASE TOTAL								**14**	**18.0**	**2**	**0.0**	**32**	**50.0**							

CH-53E AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
3000 PHASE - MISSION SKILLS																				
ACADEMICS (ACAD)																				
ACAD	ACAD	3002	(U) NEO EXECUTION	X					0.8						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	3.1	0	0.0	0	0.0							
EXPEDITIONARY (EXP)																				
EXP	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	EXP	3140	EXP SHORE BASED OPS	X	X		X						2.0	(NS)	A	1+	365			3140
EXP TOTAL								0	0.0	0	0.0	1	2.0							
ASSAULT TRANSPORT (AT)																				
AT	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	ACAD	3002	NEO EXECUTION	X					1.5											3002
	AT	3240	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	EXT	2430	LLL EXTERNALS	X	X		X							NS	A	1	180			2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	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	EXT	2430	LLL EXTERNALS	X	X		X							NS	A	1	180			2430
	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	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 T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
AERIAL EVACUATION (AE)																				
AE	GTR	2540	NON RADAR GTR	X	X		X							(NS)	A	2	365			2540
	AG	2843	NIGHT SEC AG	X	X		X							NS	A	2+	180			2843
	LLL	2231	LLL SEC CALS	X	X		X							NS	A	2	180			2231
	LLL	2331	LLL SEC TERF	X	X		X							NS	A	2	180			2331
	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								4	3.8	0	0.0	5	10.0							
4000 PHASE - CORE PLUS																				
ACADEMICS (ACAD)																				
ACAD	ACAD	4011	(U) EA ADGR	X					1.0						G		*			4011
	ACAD	4050	(U) EA ELECTRONIC 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	365			4110
	HIE	4140	RAPPEL	X	X		X						1.5	(NS)	A	1	365			4140
	HIE	4141	PARAOPS	X	X		X						1.5	(NS)	A	1	365			4141
HIE TOTAL								0	0.0	0	0.0	3	4.5							
AVIATION DELIVERED GROUND REFUELING (ADGR)																				
ADGR	ADGR	4200	TBFDS STATIC TRAINING	X	X	X							1.5	D	A		*			4200
	ADGR	4240	TBFDS OPERATION	X	X		X						1.5	(NS)	A	1	365			4201
ADGR TOTAL								0	0.0	0	0.0	2	3.0							
TERRAIN FLIGHT EXTERNALS (TERF EXT)																				
TERF EXT	TERF EXT	4412	DAY TERF EXTERNALS	X	X		X						1.5	D	A	1	365			4412
	TERF EXT	4440	NS TERF EXTERNALS	X	X		X						1.5	NS	A	1	180			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	E		4510
	DM	4511	FW DM	X	X		X						1.5	D	A	2	365	E		4511
DM 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)																				

CH-53E AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
CBRN	CBRN	4600	CBRN	X							1.5			(NS)	S/A		*			4640
CBRN TOTAL								0	0.0	1	1.5	0	0.0							
CARRIER QUALIFICATION (CQ)																				
CQ	CQ	4711	DAY CQ	X	X		X						1.5	D	A	1	365			4711
	CQ	4743	NIGHT CQ	X	X		X						1.5	NS	A	1	365			4743
CQ TOTAL								0	0.0	0	0.0	2	3.0							
TAIL GUNNERY (TG)																				
TG	TG	4800	STATIC TG TRAINING	X	X				1.5					D	A	1	*			4800
	TG	4810	DAY TG	X	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	E		4840
TG TOTAL								1	1.5	0	0.0	3	4.5							
MOVING TARGET GUNNERY (MTG)																				
MTG	MTG	4841	MTG	X	X		X						1.5	(NS)	A	1+	365			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							
RAID (RIE)																				
RIE	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	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							
AVIATION DELIVERED GROUND REFUELING (ADGR)																				
ADGR	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	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			4201
	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							
SEA	GTR	2540	NON RADAR GTR	X	X		X						1.5	(NS)	A	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							
TOTAL CORE PLUS PHASE								6	6.5	1	1.5	28	44.5							

CH-53E AERIAL OBSERVER T&R MATRIX (2000-6000 PHASE)																				
SKILL	STAGE	TRNG CODE	T&R DESCRIPTION	POI				ACADEMIC		SIMULATOR		FLIGHT		CON	DEVICE	# A/C	REFLY	EVAL	EOM	EVENT CONV
				B	R	SC	M	#	ACAD	#	SIM	#	FLT							
INSTRUCTOR TRAINING (5000 PHASE)																				
AERIAL GUNNERY INSTRUCTOR (AGI)																				
AGI	AGI	5400	AGI STATIC TRAINING	X	X				3.0					D	A	1	*			N/A
	AGI	5401	AGI STATIC TRAINING	X	X				1.0					D	A	1	*			N/A
	AGI	5402	AGI STATIC TRAINING	X	X				3.0					D	A	1	*			N/A
	AGI	5403	DAY MTG	X									1.5	D	A	1+	*			5412
	AGI	5404	NS SEC AG	X									1.5	NS	A	2	*			N/A
	AGI	5405	DAY SEC TG	X									1.5	NS	A	2	*			5431
	AGI	5406	NS SEC TG	X									1.5	NS	A	2	*			5413
	AGI	5407	NS SEC AG	X	X								1.5	NS	A	2	*	E		N/A
	AGI	5408	NS SEC TG	X	X								1.5	NS	A	2	*	E		N/A
AGI TOTAL								3	7.0	0	0.0	6	9.0							
6000 PHASE - REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RQD)																				
NATOPS (NTPS)																				
NTPS	NTPS	6000	OPEN BOOK EXAM	X	X		X		3.0						G		365	X	X	6000
	NTPS	6001	CLOSED BOOK EXAM	X	X		X		1.0						G		365	X	X	6001
	NTPS	6002	ORAL EXAM	X	X		X		2.0						G		365	X	X	6002
	NTPS	6100	NATOPS EVALUATION FLIGHT	X	X		X						1.5	(NS)	A	1	365	X	X	6100
NTPS TOTAL								3	6.0	0	0.0	1	1.5							
CRM																				
CRM	CRM	6003	CRM GRND CLASS	X	X		X		1.5								365	X	X	6003
	CRM	6101	CRM FLT	X	X		X						1.5	(NS)	A	1	365	X	X	6101
CRM TOTAL								1	1.5	0	0.0	1	1.5							