

CHAPTER SEVEN

CH-53 SUPPLEMENTARY COURSES

CH-53 SPECIFIC ACADEMIC SUPPORT PACKAGE

Course Objective: To provide the CH-53 pilot with additional ground training as required by MCO P3500.14.

Length: 57 classroom hours

Notes:

1. The Academic Support Package (ASP) is developed by MAWTS-1 and intended to be instructed by a WTI or other qualified squadron instructor. The Academic Syllabus shall be integrated into the combat ready (17 hours of academic instruction), combat qualified (23 hours of academic instruction) and fully combat qualified stages of training (17 hours of academic instruction). Classes delineated in paragraph 8 shall be conducted annually for all pilots (9 hours of academic instruction).
2. All classes listed below in the academic syllabus are available on either the secret (S) or unclassified (U) versions of the MAWTS-1 ASP.

Academic Syllabus:

1. The following syllabus supports the 200-level (Combat Ready) Phase of training:
 - a. In direct support of the Familiarization (FAM) Stage, the following academic syllabus shall be completed:
 - (1) Self-Paced Readings:
 - (a) TACMAN Chapter 1
 - (b) NATOPS
 1. (E) Chapter 1, 2, 4, 7, 12, 13
 2. (D) Chapter 1, 2, 4, 8, 12, 16.2, 16.3
 - (2) Lectures:
 - (a) **Prior to Stage Completion:**
 1. MAWTS-1 Assault Support
 2. CH-53 ARC 210

GENERIC ASP
CH-53 ASP

b. In direct support of the Formation (FORM) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 2
- (b) NATOPS
 - 1. (E) Chapter 9.1 thru 9.11
 - 2. (D) Chapter 8.9

(2) Lectures: N/A

c. In direct support of the Confined Area Landing (CAL) Stage, the following academic syllabus should be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 2, 20
- (b) MAWTS-1 NVD MAN Chapter: 2, 3, 8, 10
- (c) NATOPS
 - 1. (E) Chapter 7.8-7.8.13, 11
 - 2. (D) Chapter 13.4-13.7

(2) Lectures:

(a) **Prior to NVD Stage Initiation:**

- 1. NITE LAB The Night Environment **NITE LAB ASP**

d. In direct support of the Terrain Flight (TERF) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 3
- (b) MAWTS-1 NVD MAN Chapter: 5, 6, 11, 12
- (c) NATOPS
 - 1. (E) Chapter 9.1
 - 2. (D) Chapter 8.9

(2) Lectures:

(a) **Prior to Stage Initiation:**

- 1. ASD TERF **ASD ASP**

(b) Prior to NVD Stage Initiation:

1. NITE LAB Route Considerations **NITE LAB ASP**

(c) Prior to Stage Completion:

1. ASD Tactical Aircrew Coordination **ASD ASP**

e. In direct support of the External (EXT) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 14.1-14.4.4, 14.7-14.7.5
- (b) MAWTS-1 NVD MAN Chapter: 14
- (c) NATOPS
 1. (E) Chapter 2.21, 4.6, 9.12, 11.15-11.17
 2. (D) Chapter 2.15, 8.11

(2) Lectures: N/A

f. In direct support of the Simulator Defensive Measures (SDM) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings: N/A

1. MAWTS-1 DM Guide

(2) Lectures: N/A

g. In direct support of the Simulator Aerial Refueling (SAR) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

1. Aerial Refueling NATOPS

(2) Lectures: N/A

h. In direct support of the Simulator Carrier Qualification (SCQ) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

1. LHA/LHD NATOPS

(2) Lectures: N/A

- i. In direct support of the Field Carrier Landing Practice (FCLP) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

1. NWP 42

(2) Lectures: N/A

- j. In direct support of the Tactics (TAC) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 10, 11
- (b) MAWTS-1 NVD MAN Chapter: 15, 20, 21
- (c) USMC Rotary Wing Tactical SOP
- (d) NATOPS
 1. (E) Chapter 6.6, 6.7
 2. (D) Chapter 7

(2) Lectures:

(a) **Prior to Stage Initiation:**

1. ASD Objective Area Planning and Briefing ASD ASP

(b) **Prior to Stage Completion:**

1. ASD Tactical Brief and Debrief ASD ASP
2. NITE LAB Tactics in the Night Environment ASD ASP

- k. In general support of the Combat Ready Phase, the following academic syllabus should be completed:

(1) Lectures:

- (a) MAWTS-1 Six Functions Of Marine Aviation GENERIC ASP
- (b) MAWTS-1 Marine Corps Planning Process GENERIC ASP
- (c) MAWTS-1 FW Threat To The MAGTF GENERIC CLASSIFIED ASP
- (d) MAWTS-1 RW Threat To The MAGTF GENERIC CLASSIFIED ASP

- (e) MAWTS-1 Surface To Air Threat To The MAGTF GENERIC CLASSIFIED ASP
- (f) NITE LAB NVG FLIR Sensor Integration NITE LAB ASP
- (g) CH-53 HNVS CH-53 ASP
- (h) CH-53 ANVS-7 HUD CH-53 ASP

2. The following syllabus supports the 300-Level (Combat Qualified) Phase of training:

a. In direct support of the Confined Area Landing (CAL) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 4.7-4.7.4
- (b) MAWTS-1 NVD MAN Chapter: 19

(2) Lectures: N/A

b. In direct support of the Terrain Flight (TERF) Stage, the following academic syllabus shall be completed.

(1) Self-Paced Readings:

Review :

- (a) TACMAN Chapter 3
- (b) MAWTS-1 NVD MAN Chapter: 5, 6, 11, 12
- (c) NATOPS
 - 1. (E) Chapter 9.1
 - 2. (D) Chapter 8.

(2) Lectures: N/A

c. In direct support of the External (EXT) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) NATOPS Chapter 28

(2) Lectures:

(a) **Prior to Stage Completion:**

- 1. CH-53 Heavy Lift CH-53 ASP

d. In direct support of the Defensive Measures (DM) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 5, 8, 21
- (b) NATOPS
 - 1. (E) Chapter 19
 - 2. (D) Chapter 15.7-15.9.2
- (c) MAWTS-1 DM Guide

(2) Lectures:

(a) **Prior to Stage Initiation:**

- 1. CH-53 Defensive Measures CH-53 ASP
- 2. ASD Evasive Maneuvers ASD CLASSIFIED ASP

(b) **Prior to Stage Completion:**

- 1. ASD AAA Threat ASD CLASSIFIED ASP
- 2. ASD IR SAM Threat ASD CLASSIFIED ASP
- 3. ASD Radar SAM Threat ASD CLASSIFIED ASP
- 4. CH-53 ALE-39 CH-53 CLASSIFIED ASP
- 5. CH-53 APR-39 CH-53 CLASSIFIED ASP
- 6. CH-53 AAR-47 CH-53 CLASSIFIED ASP
- 7. CH-53 ALQ-157 CH-53 CLASSIFIED ASP

(3) Chalk Talks:

- 1. DM Walk through

e. In direct support of the Aerial Refueling (AR) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 13
- (b) NATOPS
 - 1. (E only) Chapter 4.14, 9.10, 12.30
- (c) Aerial Refueling NATOPS
- (d) MAWTS-1 NVD Manual Chapter: 18

(2) Lectures:

(a) **Prior to Stage Completion:**

1. MAWTS-1 Tactical Aerial Refueling **GENERIC ASP**

(3) Chalk Talks:

1. Rendezvous / Join-up types and procedures
2. Visual cues for Observation, Pre-contact and Refueling positions

f. In direct support of the Carrier Qualification (CQ) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

1. NWP 42

(2) Lectures: N/A

(3) Chalk Talk:

(a) CQ Patterns

g. In direct support of the Tactics (TAC) Stage, the following academic syllabus should be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 12
- (b) USMC Rotary Wing Tactical SOP

(2) Lectures:

(a) **Prior to Stage Completion:**

1. MAWTS-1 MAGTF FSCMs **GENERIC ASP**
2. NITE LAB Ordnance Considerations **NITE LAB ASP**
3. MAWST-1 Assault Support Escort **ASD ASP**
Tactics
4. ASD Tactical Briefing & Debriefing **ASD ASP**

(3) Chalk Talks: N/A

h. In general support of the Combat Qualified Phase, the following academic syllabus should be completed:

(1) Lectures:

- a. MAWTS-1 Intelligence Support to Mission Planners **GENERIC ASP**
- b. MAWTS-1 Aviation Support to the MAGTF **GENERIC ASP**
- c. ASD GCE Raid Planning **ASD ASP**
- d. ASD Rapid Response Planning **ASD ASP**
- e. ASD Execution Checklist **ASD ASP**
- f. MAWTS-1 TRAP **GENERIC ASP**
- g. ASD ACEOI - ATO **ASD ASP**
- h. NITE LAB FLIR Operational Considerations **NITE LAB ASP**

3. The following syllabus supports the 400-Level (Full Combat Qualified) Phase of training:

a. In direct support of the Helicopter Insertion Extraction (HIE) Stage, the following academic syllabus shall be completed for the applicable HIE sortie:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 18
- (b) NATOPS
 - 1. (E) Chapter 9.3
 - 2. (D) Chapter 9.3

(2) Lectures:

(a) **Prior to Stage Initiation:**

- 1. ASD FASTROPE **ASD ASP**
- 2. ASD SPIE **ASD ASP**
- 3. ASD HELOCAST **ASD ASP**
- 4. ASD RAPPEL **ASD ASP**

b. In direct support of the Defensive Measures (DM) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) MAWTS-1 DM Guide

(2) Lectures:

(a) **Prior to Stage Initiation:**

- | | |
|-----------------------------|-----------|
| 1. CH-53 Defensive Measures | CH-53 ASP |
| 2. ASD Specific Ps/EM | ASD ASP |

(b) **Prior to Stage Completion:**

- | | |
|---------------------------|--------------------|
| 1. ASD Evasive Maneuvers | ASD CLASSIFIED ASP |
| 2. ASD Attack Helo Threat | ASD CLASSIFIED ASP |
| 3. ASD F/W Threat | ASD CLASSIFIED ASP |

(3) Chalk Talks:

1. DM Walk through

- c. In direct support of the NBC Flight Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 17

(2) Lectures: N/A

- d. In direct support of the Tactics (TAC) Stage, the following academic syllabus shall be completed:

(1) Self-Paced Readings:

- (a) TACMAN Chapter 15
(b) NATOPS Chapter 25, 26
(c) MAWTS-1 MOUT Manual

(2) Lectures:

(a) **Prior to Stage Completion:**

- | | |
|---|---------|
| 1. ASD MOUT | ASD ASP |
| 2. ASD Aviation Operations In Urban Terrain | ASD ASP |

e. In general support of the Full Combat Qualified Phase, the following academic syllabus should be completed:

(1) Lectures:

- (a) MAWTS-1 Joint Air Operations **GENERIC ASP**
- (b) MAWTS-1 Control Of Aircraft & Missiles **WTI READ AHEAD**
- (c) MAWTS-1 MAGTF Targeting and Fire **GENERIC ASP**
Support Planning
- (d) MAWTS-1 REC Threat To The MAGTF **GENERIC CLASSIFIED ASP**
- (e) MAWTS-1 ROE & The Law Of War **GENERIC CLASSIFIED ASP**
- (f) ASD NEO Execution **ASD ASP**

4. The following syllabus shall be completed in support of Section Leader training:

a. Self-Paced Readings:

(1) MCWP 5-1 *Marine Corps Planning Process*

b. Lectures: **Prior to designation**, review all previously introduced lectures, placing special emphasis on the following:

- (1) MAWTS-1 Marine Corps Planning Process **ASD ASP**
- (2) MAWTS-1 MAGTF Fire Support **ASD ASP**
Coordination Measures
- (3) MAWTS-1 Intelligence Support to Mission **GENERIC CLASSIFIED ASP**
Planners
- (4) ASD Tactical Briefing and Debriefing **ASD ASP**

c. Chalk Talks: N/A

5. The following syllabus shall be completed in support of Division Leader training:

a. Self-Paced Readings:

- (1) TACMAN Chapter 11
- (2) MAWTS-1 *ACE Battle Staff Planning Guide*

b. Lectures: **Prior to designation**, review all previously introduced lectures, placing special emphasis on the following:

- (1) MAWTS-1 ACE Battle Staff Planning **GENERIC ASP**
- (2) MAWTS-1 ROE and the Laws of War **GENERIC CLASSIFIED ASP**
- (3) MAWTS-1 Aviation Support to the MAGTF **GENERIC ASP**
- (4) ASD Objective Area Planning & Briefing **ASD ASP**

- c. Chalk Talks: N/A
6. The following syllabus shall be completed in support of Flight Leader training:
- a. Self-Paced Readings:
 - (1) MAWTS-1/TTECG How to Plan a Helicopter Assault
 - b. Lectures: **Prior to designation**, review all previously introduced lectures, placing special emphasis on the following:
 - (1) MAWTS-1 Joint Air Operations GENERIC ASP
 - (2) MAWTS-1 Tactical Recovery of Aircraft and Personnel (TRAP) GENERIC ASP
 - (3) ASD Execution Checklist ASD ASP
 - (4) ASD NEO Execution ASD ASP
 - c. Chalk Talks: N/A
7. The following syllabus shall be completed in support of Air Mission Commander training:
- a. Self-Paced Readings:
 - (1) TACMAN Chapter 11
 - (2) "Lessons from the Gulf: Helicopterborne Assaults," *Marine Corps Gazette* February 1996
 - b. Lectures: **Prior to designation**, review all previously introduced lectures, placing special emphasis on the following:
 - (1) MAWTS-1 Control of Aircraft & Missiles WTI READ AHEAD
 - (2) MAWTS-1 MAGTF Targeting and Fire Support Planning GENERIC ASP
 - (3) ASD Rapid Response Planning ASD ASP
 - (4) ASD Helicopter Assault Key Players ASD ASP
 - c. Chalk Talks: N/A
8. The following classes should be presented to all pilots annually:
- a. MAWTS-1 MAGTF FSCMs WTI READ AHEAD
 - b. MAWTS-1 TRAP GENERIC ASP
 - c. ASD Objective Area Planning ASD ASP
 - d. ASD Tactical Aircrew Coordination ASD ASP
 - e. ASD Mission Planning ASD ASP

- f. ASD AAA Threat
- g. ASD IR SAM Threat
- h. ASD RADAR SAM Threat
- i. ASD ASE

ASD CLASSIFIED ASP
ASD CLASSIFIED ASP
ASD CLASSIFIED ASP
ASD CLASSIFIED ASP

CH-53 NIGHT SYSTEMS FAMILIARIZATION INSTRUCTOR (NSFI) CERTIFICATION COURSE

Course Objective: To certify a CH-53 pilot capable of safely conducting ground and airborne instruction of night vision device (NVD) flight, during high light level (HLL) conditions during the combat capable flight phase.

Length: IUT: 9 classroom hours and 3 sorties
Cert: 1 hour NSFI test, 1 hour class presentation and 1 sortie

Notes:

1. The CH-53 NSFI Course is developed by MAWTS-1 and supports the certification of NSFIs for fleet replacement squadrons only. The IUT portion is designed to be taught by an NSI, NSFI, or MAWTS-1 instructor. Upon certification by an NSI or MAWTS-1 instructor, the NSFI designation may be made at the discretion of the squadron commanding officer.
2. Previously certified CH-53 NSIs, not requiring refresher training, may be designated as an NSFI at the discretion of the squadron commanding officer.
3. Night systems familiarization training is defined as basic night vision device orientation and use. Flight operations include all maneuvers contained within the combat capable flight phase.

Prerequisites:

1. Night System Qualified (NSQ) and proficient per MCO P3500.14 and MCO P3500.16.
2. Designated FAM instructor.

IUT STAGE

IUT Academic Syllabus:

1. The instructor under training (IUT) will review and be capable of presenting the following classes from the MAWTS-1 ASP:
 - a. NITE LAB The Human Visual System NITE LAB ASP
 - b. NITE LAB Introduction to the NVGs NITE LAB ASP
 - c. NITE LAB The Night Environment NITE LAB ASP
 - d. NITE LAB NVG Adjustment Procedures NITE LAB ASP
 - e. NITE LAB NVG Misperceptions and Illusions NITE LAB ASP
 - f. NITE LAB Night Operations NITE LAB ASP
 - g. NITE LAB NVG Route Planning
Considerations NITE LAB ASP

h. CH-53E HNVS

CH-53 ASP

2. The academic syllabus will be completed within 60 days prior to beginning the certification stage of the flight syllabus.

IUT Flight Syllabus:

1. The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus must be complete within six (6) months following the first IUT flight. If six months have elapsed since completion of any IUT flight, that flight must be reflight prior to completing the final certification flight.
2. The IUT will plan, brief, lead, debrief, and demonstrate the ability to conduct and instruct combat capable NVG training.
3. The following flights will be instructed by a NSI, NSFI, or MAWTS-1 instructor:

NVD 560 1 CH-53 N

Goal: Conduct low work, pattern work, and simulated emergencies emphasizing instructional techniques under HLL conditions as defined by MCO P3500.14.

Requirements:

1. The IUT shall demonstrate a thorough knowledge of the MAWTS-1 NVD manual and brief/discuss the following: the use of NVGs, cockpit lightning, aircraft external lighting, crew coordination, comfort level, emergency procedures, NVG failures, depth perception, visual illusions, scan techniques, inadvertent IMC, waveoff procedures, NVG training restrictions/requirements detailed in MCO P3500.14 and MCO P3500.16.
2. The IUT will conduct, with an emphasis on instructional technique, low work, pattern work, and simulated emergencies.
3. Review single/dual/triple engine malfunctions, simulated inadvertent IMC on landing, recovery from inadvertent IMC, hover/no hover landings, running landings, and simulated NVG failures.

Ordinance: N/A

External Support Requirements: N/A

NVD 561 2 CH-53 N NS

Goal: Conduct, with the emphasis on instructional techniques, CALs and navigation utilizing NVGs under HLL conditions as defined by MCO P3500.14.

Requirements:

1. Brief and discuss NVG map preparation, NVG route cards, NVG considerations, enroute hazards, aircraft lighting, crew coordination during navigation, crew comfort level, inadvertent IMC, on board navigation systems, NVG CAL considerations, LZ selection, LZ lighting, wave off procedures, brownout/whiteout, checkpoint identification, moon angle/azimuth and shadowing. Also brief and discuss confined area landings, tactical formations, closure rates and NVG lead changes.
2. The IUT will conduct, with an emphasis on instructional techniques, CALs at a LZ which meets the special considerations for landing zones outlined in the MAWTS-1 NVD manual. The minimum number of CALs will be determined by the NSFI, NSI or MAWTS-1 instructor.
3. The IUT will conduct, with an emphasis on instructional techniques, a navigation route of 50 NM or greater, at or above 200 ft AGL, utilizing both a 1:250,000 and 1:50,000 map. The IUT is to remain oriented within 200 meters of the preplanned route and arrive at the final checkpoint within +/- 30 seconds. The minimum number of checkpoints will be determined by the NSFI, NSI or MAWTS-1 instructor.

Ordinance: N/A

External Support Requirements: N/A

NVD 562

1 CH-53

N NS

Goal: Conduct, with the emphasis on instructional techniques, externals under HLL conditions as defined in MCO P3500.14.

Requirements:

1. Brief and discuss the use of NVDs, cockpit lighting, aircraft external lighting, crew coordination, NVG failure, ITOs in a dusty environment, waveoffs, comfort level, voice and visual signals, flight envelope of various loads, cargo jettison procedures, illumination techniques, LZ preparation, low altitude requirements, and HST requirements.
2. The IUT will conduct, with emphasis on instructional technique, takeoffs, precision approaches and precision delivery of external loads into a confined area utilizing NVGs. When available, the IUT will demonstrate proficiency in dual point external hookups, however, single point are acceptable.

Ordnance: N/A

External Support Requirements: External Loads and HST

CERTIFICATION STAGE

Certification Academic Syllabus

1. The IUT will present to a NSI or MAWTS-1 instructor, one of the classes listed above, as determined by the NSI or MAWTS-1 instructor, before completing the certification stage of the flight syllabus. Presentation of the class shall be annotated in the APR.
2. An NSI or MAWTS-1 instructor will administer the written exam. The minimum passing grade for the exam is 80%. In the event of an exam failure, the certification will be terminated and another attempt will not be allowed for at least one month.
3. The academic syllabus will be completed within 60 days prior to beginning the certification stage of the flight.

Certification Flight Syllabus

1. The IUT'S ability to instruct night systems operations under HLL conditions as defined by MCO P3500.14 will be evaluated by the NSI or MAWTS-1 instructor.
2. The IUT will plan, brief, lead, debrief, and demonstrate the ability to conduct and instruct NVG combat capable training.

NVD 563E

1 CH-53

N NS

Goal: Evaluate the IUTs ability to instruct NVD combat capable training under HLL conditions as defined by MCO P3500.14.

Requirements:

1. Review NVD 560/561/562 brief and discuss items.
2. The IUT will demonstrate, with the emphasis on instructional technique, low work, pattern work, emergency procedure operations and confined area landings. The minimum number of CALs will be determined by the NSI or MAWTS-1 instructor.
3. The IUT will demonstrate, with the emphasis on instructional technique, a navigation route using a 1:250,000 and 1:50,000 map (minimum 50 NM), remaining oriented within 200 meters of the preplanned route and arriving within

± 30 seconds at the final checkpoint. The minimum number of checkpoints will be determined by the NSI or MAWTS-1 instructor.

Ordinance: N/A

External Support Requirements: N/A

RECERTIFICATION REQUIREMENTS:

Refresher:

1. Previously certified CH-53 NSFIs or NSIs returning to the CH-53 requiring refresher or modified refresher training as defined in MCO P3500.14 must be recertified by an NSI or MAWTS-1 instructor respectively. Upon recertification, the NFSI designation may be made at the discretion of the squadron commanding officer. The following comprises the recertification course:
 - a. The IUT must meet all prerequisites listed previously.
 - b. The IUT must complete the certification stage (both the academic and flight portions).

Transition:

1. Pilots certified as an NSI or NSFI that transition to the CH-53 as defined in MCO P3500.14 must complete the entire CH-53 NSFI Certification Course.

Conversion:

1. Pilots certified as an NSI or NSFI converting within the CH-53 series that do not require refresher training as defined in MCO P3500.14 maintain their NSFI certification and may be designated an NSFI at the discretion of the squadron commanding officer.
2. Pilots certified as an NSI or NSFI in an aircraft other than the CH-53, that undergo conversion training to the CH-53 as defined in MCO P3500.14 must complete the entire CH-53 NSFI Certification Course.

CH-53 DEFENSIVE MEASURES INSTRUCTOR (DMI) CERTIFICATION COURSE

Course Objective: To certify a CH-53 pilot capable of instructing the Defensive Measures (DM) academic and flight syllabus per MCO P3500.16.

Length: IUT: 12 classroom hours, 2 sorties
Cert: 1 hour class presentation, 1 hour DMI test, and 1 sortie

Notes:

The CH-53 DMI Course is developed by MAWTS-1. The IUT stage is designed to be instructed by a DMI or MAWTS-1 instructor. Upon certification by MAWTS, the DMI designation may be made at the discretion of the squadron commanding officer.

Prerequisites:

1. DM qualified and proficient in accordance with MCO P3500.14 and MCO P3500.16.
2. Successful completion of all CH-53 Defensive Measures sorties outlined in MCO P3500.16.
3. Designated TERFI.
4. Designated Section Leader.

IUT STAGE

IUT Academic Syllabus:

1. The Instructor Under Training (IUT) will review the MAWTS-1 DM Guide, the CH-53 Tactical Manual (VOL I & II), and the AFTTP 3-1.
2. The IUT will review and be capable of presenting the following classes from the MAWTS-1 Academic Support Package:
 - a. ASD Evasive Maneuvers ASD CLASSIFIED ASP
 - b. CH-53 Defensive Measures CH-53 ASP
 - c. ASD IR SAM Threat ASD CLASSIFIED ASP
 - d. ASD AAA Threat ASD CLASSIFIED ASP
 - e. ASD F/W Threat ASD CLASSIFIED ASP
 - f. ASD Attack Helicopter Threat ASD CLASSIFIED ASP
 - g. ASD ASE ASD CLASSIFIED ASP
 - h. CH-53 AN/ALE-39 and AN/AAR-47 ASD CLASSIFIED ASP

- i. CH-53 AN/APR-39 (V)1
- j. CH-53 AN/ALQ-157
- k. ASD Specific Ps/EM

ASD CLASSIFIED ASP
ASD CLASSIFIED ASP
ASD ASP

IUT Flight Syllabus:

1. The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus must be complete within six (6) months following the first IUT flight. If six months have elapsed since completion of any IUT flight, that flight must be reflight prior to completing the final certification flight.
2. The IUT will plan, brief, lead, debrief and demonstrate the ability to conduct and instruct the defensive measures syllabus.
3. The following flights will be instructed by a squadron DMI or MAWTS-1 instructor:

DM 580 2 v Ground Threat D

Goal: Demonstrate the ability to instruct 2 v ground threat tactics in accordance with the MAWTS-1 DM Guide.

Requirements:

1. Brief and discuss aircrew coordination, inter flight coordination, crew comfort level, lookout doctrine, situational awareness, use of ALE-39, APR-39, ALQ-157, AAR-47, tactical formation maneuvering, use of RADAR horizons, RADAR masking, maneuver and chaff to defeat threat RADAR systems, capabilities, limitations, and envelopes of the threat system, the use of terrain masking, maneuver, IR jamming, and flares to defeat threat IR missiles.
2. The IUT will demonstrate, with emphasis on instructional technique, multi-aircraft DM against a ground threat. This sortie should be conducted in airspace that permits the employment of expendables.

Ordnance: 40 chaff 20 flares; 2 XM-218 (no ordnance)

External Support Requirements: Ground based electronic threat system, and when available a visual Surface to Air Missile launch simulation system.

Goal: Demonstrate the ability to instruct 2 v 1 RW/FW DM tactics in accordance with the MAWTS-1 DM Guide.

Requirements:

1. Brief and discuss aircrew coordination/inter flight coordination, crew comfort level, lookout doctrine, standardized terminology, situational awareness, DM training rules, closure rate, radius of turn, energy state, Ps/EM considerations, capabilities, limitations, and envelopes of the aggressor aircraft, use of ALE-39, APR-39, ALQ-157, and AAR-47, use of .50 caliber machine gun, DM against RW/FW aggressor, supporting roles.
2. The IUT will demonstrate, with emphasis on instructional technique, the ability to instruct 2 v 1 DM with rotary wing or fixed wing aggressor aircraft. This sortie should be conducted in airspace that permits the employment of expendables.

Ordnance: 40 flares and 20 chaff; 2 XM-218 (no ordnance)

External Support Requirements: One FW or RW aggressor aircraft.

CERTIFICATION STAGE

Certification Academic Syllabus

1. The IUT will present to a DMI, WTI, or MAWTS-1 instructor, one of the classes listed above as determined by the instructor, before completing the certification stage of the flight syllabus. Presentation of the class shall be annotated in the APR.
2. A MAWTS-1 instructor will administer the written exam. The minimum passing grade for the exam is 80%. In the event of an exam failure, the certification will be terminated and another attempt will not be allowed for at least one month.
3. The academic syllabus will be completed within 60 days prior to beginning the certification stage of the flight syllabus.

Certification Flight Syllabus

1. The following flight will be evaluated by a MAWTS-1 instructor. If DM 581 was flown versus a RW aggressor, DM 582 shall be flown versus a FW aggressor. If DM 581 was flown versus a FW aggressor, DM 582 shall be flown versus a RW aggressor.
2. The IUT will plan, brief, lead, debrief and demonstrate the ability to conduct and instruct the defensive measures syllabus.

Goal: Evaluate 2 v 1 DM tactics and instructional technique in accordance with the MAWTS-1 DM Guide.

Requirements:

1. Brief and discuss aircrew coordination/Inter flight coordination, crew comfort level, lookout doctrine, standardized terminology, situational awareness, DM training rules, closure rate, radius of turn, and energy state, use of ALE-39, APR-39, ALQ-157, and AAR-47, use of .50 caliber machine gun, DM against RW/FW aggressor, Ps/E-M, supporting roles, and RW/FW aggressor capabilities, limitations, weapons delivery envelopes and parameters.
2. The IUT will demonstrate, with an emphasis on instructional technique, the ability to execute defensive measures versus a RW or FW threat. This sortie should be conducted in airspace that permits the employment of expendables.

Ordnance: 40 flares and 20 chaff; 2 XM-218 (no ordnance)

External Support Requirements: One FW or RW aggressor aircraft.

RECERTIFICATION REQUIREMENTS:

Refresher:

1. Previously certified CH-53 DMIs or ACMI's returning to the CH-53 requiring refresher or modified refresher training as defined in MCO P3500.14 must be recertified by MAWTS-1. Upon recertification by MAWTS-1, the DMI designation may be made at the discretion of the squadron commanding officer. The following comprises the recertification course:
 - a. The IUT must meet all prerequisites previously listed.
 - b. The IUT must successfully complete the DMI exam, administered by a MAWTS-1 instructor.
 - a. The IUT must complete DM 582E evaluated by a MAWTS-1 instructor.

Transition:

1. Pilots certified as a DMI or ACMI, that transition to the CH-53 as defined in MCO P3500.14, must complete the entire CH-53 DMI Certification Course previously listed.

Conversion:

1. Pilots certified as a DMI converting within the CH-53 series, that do not require refresher training as defined in MCO P3500.14, maintain their DMI certification and may be designated a DMI at the discretion of the commanding officer.
2. Pilots certified as an DMI or ACMI in an aircraft other than CH-53, that undergo conversion training to the CH-53 as defined in MCO P3500.14 must complete the entire CH-53 DMI Certification Course.

CH-53 NIGHT SYSTEMS INSTRUCTOR (NSI) CERTIFICATION COURSE

Course Objective: To certify a CH-53 pilot capable of safely conducting ground and airborne instruction of the CH-53 night vision device (NVD) flight syllabus outlined in MCO P3500.16.

Length: IUT: 15 classroom hours, 1 simulator sortie and 4 sorties
Cert: 1 hour class presentation, 1 hour NSI test and 1 sortie

Notes:

1. Despite reduction in T&R NVD hours for NSQ designation in the sortie-based training structure, a requirement remains for aggregate experience in the aircraft to meet the standards for successful completion of the NSI certification. Experience has shown that pilots with a minimum of 90 NVD hours, 40 hours of which are under LLL conditions, and three months experience as a Section Leader possess the requisite NVD flight experience and the basic foundation of flight leadership to instruct in the fleet NVD environment.
2. The CH-53 NSI Course is developed by MAWTS-1. Upon certification by MAWTS-1, the NSI designation may be made at the discretion of the squadron commanding officer.
3. Previously certified and proficient NSFIs may begin the NSI IUT stage at the NVD 591 flight at the discretion of the squadron commanding officer.

Prerequisites:

1. Night Systems Qualified (NSQ) Low Light Level and EXT-342 proficient and current, in accordance with MCO P3500.14 and MCO P3500.16.
2. Designated Section Leader.
3. Designated TERF Instructor.

IUT STAGE

IUT Academic Syllabus:

1. The instructor under training (IUT) will review and have proficient working knowledge of the following:
 - a. CH-53 TACMAN (VOL I and VOL II)
 - b. OPNAV 3710.7
 - c. MCO P3400.14 (T&R Vol I)
 - d. MCO P3400.16 (T&R Vol III)

- e. FMFM 6-21 (TAC Fund of Helo Ops)
 - f. MAWTS-1 Course Catalog
 - g. MAWTS-1 NVD Manual
 - h. AFTTP 3-1
2. The instructor under training (IUT) will review and be capable of presenting all the following Night Systems related MAWTS-1 Academic Support Package classes:
- a. NITE LAB The Human Visual System NITE LAB ASP
 - b. NITE LAB Introduction to Night Vision Goggles NITE LAB ASP
 - c. NITE LAB The Night Environment NITE LAB ASP
 - d. NITE LAB NVG Adjustment Procedures NITE LAB ASP
 - e. NITE LAB NVG Misperceptions and Illusions NITE LAB ASP
 - f. NITE LAB Night Operations NITE LAB ASP
 - g. NITE LAB NVG Route Planning NITE LAB ASP
Considerations
 - h. NITE LAB Introduction to LASER Theory NITE LAB ASP
and Systems
 - i. NITE LAB Ordnance Considerations NITE LAB ASP
 - j. NITE LAB FLIR Theory and Introduction NITE LAB ASP
 - k. NITE LAB FLIR Systems and Image NITE LAB ASP
Optimization
 - l. NITE LAB FLIR Operational Considerations NITE LAB ASP
 - m. NITE LAB Introductions to LASER Systems NITE LAB ASP
 - n. ASD Tactics in the Night Environment NITE LAB ASP
3. The academic syllabus will be completed within 60 days prior to beginning the certification stage of the flight syllabus.

IUT Flight Syllabus:

- 1. The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus must be complete within six (6) months following the first IUT flight. If six months have elapsed since completion of any IUT flight, that flight must be re-flown prior to completing the final certification flight.
- 2. The IUT will plan, brief, lead, debrief and demonstrate the ability to conduct and instruct night vision goggle operations.
- 3. A qualified and proficient NSI or a MAWTS-1 instructor will instruct the IUT flights.
- 4. Two of the four IUT flights (591-594) shall be conducted under LLL conditions.

Goal: Conduct, with an emphasis on instructional technique, the use of the HNVS and ANVIS HUD in the CH-53E.

Requirements:

1. Brief and discuss NVD emergencies for the HNVS (FLIR) and the ANVIS HUD, safety considerations, NVD training restrictions/requirements, HNVS and ANVIS HUD operation, switchology, limitations, employment, depth perception, visual illusions, NVD lighting, crew coordination and inadvertent IMC.
2. Demonstrate the proper use of the ANVIS HUD and the HNVS.
3. NSI Candidates shall have documented utilization of FLIR and ANVIS HUD either in the simulator or in A/C prior to certification flight
4. The requirement for NSI Candidates to have documented utilization of ANVIS HUD either in the simulator or in A/C prior to certification flight is waiverable by the commanding officer until the completed installation of ANVIS HUD in the CH-53E Simulator, projected for Summer, 2001. Waiver will be documented by a waiver letter in the NSI candidate's Aircrew Performance Record
5. This is required for CH-53E NSI candidates only.

Ordinance: N/A

External Support Requirements: CH-53 Simulator (if required)

Goal: Conduct, with emphasis on instructional technique, low work, FAM maneuvers, and simulated emergencies utilizing NVDs under HLL or LLL conditions as defined by MCO P3500.14.

Requirements:

1. Brief and discuss aircrew coordination and aircrew comfort level, situational awareness, goggle and degoggle procedures, NVG adjustment and preflight procedures, aircraft lighting, NVG considerations, scan techniques, NVD emergencies, safety considerations, NVD training restrictions/requirements, NVD lighting and inadvertent IMC.
2. Conduct low work, FAM maneuvers, and simulated emergencies with emphasis on instructional technique.

Ordinance: N/A

External Support Requirements: N/A

NVD 592

1 CH-53

1.0N, NS

Goal: Conduct, with emphasis on instructional technique, NVG CALs and external operations utilizing NVDs under HLL or LLL conditions as defined by MCO P3500.14.

Requirements:

1. The IUT will demonstrate instructional techniques for takeoffs, precision approaches, and precision delivery of an external load to a confined area utilizing NVDs. The IUT will demonstrate proficiency in hookups when available, dual point is preferred, but single point is acceptable.
2. Brief and discuss the use of NVDs, cockpit lighting, aircraft external lighting, crew coordination, NVG failure, ITOs in a dust confined area, waveoffs, crew coordination, comfort level, voice and visual signals, flight envelope of various loads, cargo jettison procedures, illumination techniques, LZ preparation, low altitude requirements, HST requirements, and the HNVS and ANVIS HUD.
3. Review single/dual engine malfunctions, simulated inadvertent IMC on landing, recovery from inadvertent IMC, simulated NVG failures, and simulated emergency procedures.
4. Conduct CALs to a landing area suitable for NVD operation. Demonstrate proficiency in the execution of takeoffs, precision approaches, and no hover landings.

Ordinance: N/A

External Support Requirements: HST and external load.

NVD 593

2 CH-53

1.5N, NS

Goal: Conduct, with emphasis on instructional technique, section TERF navigation utilizing NVDs under HLL or LLL conditions as defined by MCO P3500.14.

Requirements:

1. Brief and discuss NVD adjustment, NVD emergencies/failures, trouble shooting techniques for NVDs, NVD lighting techniques, crew coordination, comfort level, map preparation, NVD navigation, NVD training restrictions, and use of the HNVS and ANVIS HUD for ease of navigation.

2. The IUT will navigate along a predetermined route (50 NM minimum) utilizing 1:250,000 and 1:50,000 scale maps. The IUT will remain oriented within 200 meters of the preplanned route and arrive at the final checkpoint \pm 30 sec.

Ordinance: N/A

External Support Requirements: Special use airspace as required.

NVD 594

2 CH-53

1.5N, NS

Goal: Conduct an integrated tactical flight in a low to medium threat environment, utilizing NVDs under HLL or LLL conditions as defined by MCO P3500.14.

Requirements:

1. The IUT will plan brief, execute, and debrief a tactical flight.
2. The flight will consist of at least 2 CH-53s, tactical formation flight, section objective area landings, and a tactical navigation flight (75 NM minimum, 25NM in TERF regime) utilizing a 1:250,000 and 1:50,000 map. The IUT shall remain oriented within 200 meters and arrive within one minute at the final checkpoint.
3. Brief and discuss tactical formation considerations, map preparation, long range navigation techniques, ASE control/employment, objective area analysis, threat analysis and countertactics, C3 integration, escorts/supporting arms integration, and ground scheme of maneuver (as applicable).
4. Demonstrate proficiency and knowledge in the utilization of the GPS, ANVIS HUD and FLIR (if available). Employment of the APR/ALE systems must be incorporated in mission planning and execution.
5. Whenever possible, include firing of the XM-218 and countermeasures.

Ordinance: 200rds .50 CAL (optional), appropriate chaff and flare (optional).

External Support Requirements: Special use airspace as required, escort aircraft (if available)

CERTIFICATION STAGE

Certification Academic Syllabus:

1. The IUT will present to an NSI or a MAWTS-1 instructor, one of the classes per paragraph 2 of the Academic Syllabus before completing the certification stage of the flight syllabus. Presentation of the class shall be annotated in the APR.

2. A MAWTS-1 instructor will administer the written exam. The minimum passing grade for the exam is 80%. In the event of an exam failure, the certification will be terminated and another attempt will not be allowed for at least one month.
3. The Certification Academic Syllabus will be completed within 60 days prior to beginning the Certification Flight Syllabus.

Certification Flight Syllabus:

1. The IUT will demonstrate to a MAWTS-1 instructor the ability to instruct night systems operations in a tactical environment. All certification flights will be conducted under LLL conditions as defined by MCO P3500.14.
2. The IUT will plan, brief, lead, debrief and demonstrate the ability to conduct and instruct night vision goggle operations.

NVD 595E

2 CH-53

2.5N, NS

Goal: Evaluate the IUT's ability to demonstrate and instruct NVD externals, section CALs, Tactical formation flight and navigation in a low to medium threat environment.

Requirements:

1. Brief and discuss NVD LLL considerations, current Marine Corps' directives, inadvertent IMC procedures, navigation techniques, illusions of terrain flight and aircrew coordination.
2. Brief and discuss tactical formation flight and movement of aircraft within the objective area.
3. As dictated by the threat, the IUT will conduct tactical formation flight (50 NM minimum, 25 NM in TERF regime) utilizing a 1:250,000 and 1:50,000 scale map. The IUT shall remain oriented within 200 meters and arrive with ± 30 sec. at the final checkpoint.
4. The IUT will demonstrate proficiency in the utilization of the embedded GPS and HNVS (if available). Employment of the APR/ALE systems must be incorporated in mission planning and execution.
5. Whenever possible, include firing of the XM-218 and countermeasures.
6. Brief and discuss threat analysis, countertactics, C3 integration, escorts/supporting arms integration, and the ground scheme of maneuver.

7. The IUT will conduct and instruct section CALs and external operations as outlined in NVD 591. The section CALs and externals can be conducted as separate evolutions from the tactical scenario.
8. IUTs should use the CH-53 Tactical Manual as a source document for planning. The emphasis of this flight is on tactical mission planning, briefing, execution and debriefing. If available, the incorporation of escort aircraft is highly encouraged.

Ordinance: 200rds .50 CAL (optional), chaff and flare as appropriate (optional).

External Support Requirements: HST and external load; Special use airspace as required; escort aircraft (if available)

RECERTIFICATION REQUIREMENTS:

Refresher:

1. Previously certified CH-53 NSIs returning to the CH-53 requiring refresher or modified refresher training as defined in MCO P3500.14 must be recertified by a MAWTS-1 instructor. Upon recertification, the NSI designation may be made at the discretion of the squadron commanding officer. The following comprises the recertification course.
 - a. The IUT must meet all prerequisites listed previously.
 - b. The IUT must successfully complete the NSI exam, administered by a MAWTS-1 instructor.
 - c. The IUT must complete the NVD 595 flight, evaluated by a MAWTS-1 instructor.
2. Previously certified Phase I, Phase II, Phase III instructors and NSFIs must complete the entire CH-53 NSI certification course as listed.

Transition:

1. Pilots certified as an NSI that transition to the CH-53 as defined in MCO P3500.14, must complete the entire CH-53 NSI Certification Course previously listed.

Conversion:

1. Pilots certified as an NSI converting within the CH-53 series that do not require refresher training as defined in MCO P3500.14 retain their NSI certification and can be designated an NSI at the discretion of the commanding officer.

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2. Pilots certified as an NSI in an aircraft other than the CH-53 must complete the entire CH-53 NSI Certification Course previously listed.

CH-53 TRAINING SYLLABUS

EVENT	DATE	INSTRUCTOR
COMBAT READY		
FAM/INST		
SFAM/FLIR 200		
FAM/INST 201		
MAWTS-1 ASSAULT SUPPORT		
CH-53 ARC-210		
FORMATION		
FORM 210		
FORM 211		
CONFINED AREA LANDINGS		
CAL 220		
CAL 221		
NVG NIGHT ENVIRONMENT		
CAL 222		
CAL 223		
CAL 224		
TERRAIN FLIGHT		
ASD TERRAIN FLIGHT		
TERF 230		
TERF 231		
TERF 232		
ASD NVG ROUTE CONSIDERATIONS		
TERF 233		
ASD TAC AIRCREW COORD. CONSID		
EXTERNALS		
EXT 240		
EXT 241		
EXT 242		
EXT 243		
SIMULATOR DEFENSIVE MEASURES		
SDM 250		
SIMULATOR AERIAL REFUELING		
SAR 260		
SIMULATOR CARRIER QUALIFICATION		
SCQ 270		
FIELD CARRIER LANDING PRACTICE		
FCLP 271		
FCLP 272		
FCLP 273		
AERIAL GUNNERY		
AG 280		
TACTICS		
ASD OBJECTIVE AREA PLANNING		
TAC 290		
TAC 291		
ASD TACTICAL BRIEF / DEBRIEF		
NITE LAB TACTICS IN THE NT ENVIR.		
GENERAL SUPPORT ACADEMICS		
MAWTS-1 MCPP		
MAWTS-1 6 FUNCT OF MAR AVN		
FW THREAT TO THE MAGTF		
RW THREAT TO THE MAGTF		
SURFACE TO AIR THREAT TO MAGTF		
NVG FLIR SENSOR INTEGRATION		
HNVS		
ANVS-7 HUD		

EVENT	DATE	INSTRUCTOR
COMBAT QUALIFIED		
CONFINED AREA LANDING (NS LLL)		
CAL 320		
CAL 321		
CAL 322		
TERRAIN FLIGHT (NS LLL)		
TERF 330		
TERF 331		
EXTERNALS		
EXT 340		
EXT 341		
EXT 342		
EXT 343		
HEAVY LIFT EXTERNALS		
DEFENSIVE MEASURES		
CH-53 DEFENSIVE MEASURES		
ASD EVASIVE MANEUVERS		
DM 350		
ASD AAA THREAT		
ASD IR SAM THREAT		
ASD RADAR SAM THREAT		
CH-53 APR-39		
CH-53 ALE-39		
CH-53 AAR-47		
CH-53 ALQ-157		
AERIAL REFUELING		
AR 360		
AR 361		
AR 362		
TACTICAL AERIAL REFUELING		
CARRIER QUALIFICATION		
CQ 370		
CQ 371		
CQ 372		
AERIAL GUNNERY		
AG 380		
TACTICS		
TAC 390		
TAC 391		
MAWTS-1 MAGTF FSCMS		
NVG ORDNANCE CONSIDERATIONS		
ASD ESCORT TACTICS		
ASD TAC BRF & DEBRFING		
FULL COMBAT QUALIFIED		
HELO INSERTION EXTRACTION		
FAST ROPE OPERATIONS		
SPIE OPERATIONS		
RAPPEL OPERATIONS		
HIE 400		
HELOCAST OPERATIONS		
HIE 401		
HIE 402		
DEFENSIVE MEASURES		
CH-53 Ps EM		
DM 450		
DM 451		
ASD EVASIVE MANEUVERS		
ASD ATTACK HELO THREAT		
ASD FW THREAT		

NAME: _____

SSN: _____

