

# **CHAPTER TEN**

## **CH-53 CREW MEMBER SUPPLEMENTARY COURSES**



## CH-53 SPECIFIC ACADEMIC SUPPORT PACKAGE

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

**Length:** 33 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 (8 hours of academic instruction), combat qualified (19 hours of academic instruction) and fully combat qualified stages of training (5 hours of academic instruction). All classes should be conducted annually.
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 Initiation the following lecture shall be completed:
        1. EAD Tactical Aircrew Considerations and Responsibilities **EAD 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 shall 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 NVG Introduction to Night Vision Goggles NITE LAB ASP
- 2. NITE LAB NVG Adjustment Procedures NITE LAB ASP
- 3. NITE LAB NVG Night Environment NITE LAB ASP
- 4. NITE LAB Intro to NVG's 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. EAD Terrain Flight for Enlisted Aircrew **EAD 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 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) NATOPS
  1. (E) Chapter 6.6, 6.7
  2. (D) Chapter 7

(2) Lectures:

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

1. EAD Basic Principles of Escort Operations **EAD ASP**
2. EAD Tactical Recovery of Aircraft and Personnel **EAD ASP**

g. In direct support of the Air-to-Ground (AG) Stage, the following academic syllabus shall be completed:

(1) Self Paced Readings:

- (a) CH-53 NATOPS

- (b) CH-53 TACMAN
  - (c) MAWTS-1 Aerial Gunnery Manual (U) EAD Common ASP
- (2) Lectures:

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

- 1. EAD Fundamentals of Aerial Gunnery EAD ASP
- 2. EAD XM-218/GAU-16 Machine Gun EAD 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:

- (a) Review para. 1.d

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: N/A

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. EAD Intro to DM/DACT for Enlisted Aircrew EAD ASP
- 2. EAD Defensive Measures Part 2 EAD 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

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

(1) Self-Paced Readings:

(a) TACMAN Chapter 12

(2) Lectures: N/A

f. In direct support of the Air-to-Ground (AG) Stage, the following academic syllabus shall be completed:

(1) Lectures:

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

- 1. EAD LASER Safety EAD 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

(2) Lectures:

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

- |                 |         |
|-----------------|---------|
| 1. EAD Fastrope | EAD ASP |
| 2. EAD SPIE     | EAD ASP |
| 3. EAD Helocast | EAD ASP |
| 4. EAD Rappel   | EAD ASP |

(3) Chalk Talks: N/A

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. EAD Defensive Measures Pt 2 | EAD 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. EAD MOUT                                 | EAD ASP |
| 2. ASD Aviation Operations in Urban Terrain | ASD ASP |
| 3. ASD NEO Execution                        | ASD ASP |

## **CH-53 AERIAL GUNNERY INSTRUCTOR (AGI) CERTIFICATION COURSE**

**Course Objective:** To certify a CH-53 crew chief or aerial gunner as an Aerial Gunnery Instructor (AGI) capable of safely conducting academic and airborne instruction in the employment of crew served weapons in all aspects of tactical flight.

**Length:** IUT: 1 classroom hour, 2 sorties  
Cert: 1 hour class presentation, 1 hour test and 2 sorties

**Notes:** The CH-53 AGI Certification Course is developed by MAWTS-1. Upon certification by an enlisted, WTI or MAWTS-1 crew chief instructor, the AGI designation per specific weapons systems may be made at the discretion of the squadron commanding officer.

### **Prerequisites:**

1. Successful completion of all full combat qualified aerial gunnery sortie outlined in MCO P3500.16
2. Designated Aerial Gunner, and current IAW MCO P3500.14 and P3500.16.
3. Night Systems Qualified (NSQ) and current IAW MCO P3500.14 and P3500.16.

### **IUT STAGE**

#### **IUT Academic Syllabus:**

1. The AGI under training (IUT) shall review the MAWTS-1 Aerial Gunnery Manual and the CH-53 Tactical Manual (Vol I & II).
2. The IUT shall review and be capable of presenting all classes listed in the CH-53 Crew Member AG Academic Course.
3. The academic syllabus shall be completed within 60 days prior to beginning the certification stage of the flight syllabus.
4. The following class shall be presented to the AGI under training prior to the certification stage of the flight syllabus:
  - a. EAD Training the Aerial Gunner **EAD 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 completed within six (6) months following the first IUT flight. If six months have elapsed since completion of any IUT flight, that flight must be reflown prior to completing the final certification flight.
2. An enlisted AGI, WTI, or MAWTS-1 crew chief instructor will instruct the following flights.

AG 540 1 CH-53 D

**Goal:** Develop instructional techniques during day aerial gunnery.

### **Requirements:**

1. Evaluate instructional techniques in the usage and application of the following:
  - a. Weapons terminology
  - b. Sectors of fire
  - c. Lookout doctrine
  - d. Weapons preparation
  - e. Safety
  - f. Malfunctions and stoppages
  - g. Crew member responsibilities
  - h. Crew served weapons checklist application
  - i. Range estimation and lead computations
  - j. Situational awareness
  - k. Instructor technique
  - l. Crew coordination

**Ordnance:** 500 .50 Cal

**External Support Requirements:** Range/Ordnance request

AG 541 1 CH-53  
N/S

**Goal:** Develop instructional techniques during NVD aerial gunnery.

**Requirements:** Evaluate instructional techniques in the usage and application of the following:

- a. Weapons terminology.
- b. Sectors of fire.
- c. Lookout doctrine.
- d. Weapons preparation.
- e. NVD usage.
- f. LASER procedures.
- g. Safety.
- h. Malfunctions and stoppages.
- i. Crew member responsibilities.
- j. Crew served weapons checklist application.
- k. Range estimation and lead computations.
- l. Situational awareness.
- m. Instructor techniques.
- n. Crew coordination

**Ordnance:** 500 .50 Cal

**External Support Requirements:** Range/Ordnance request

## **CERTIFICATION STAGE**

### **Certification Academic Syllabus**

1. The IUT shall successfully complete a written exam for each weapon system, administered by an enlisted WTI or MAWTS-1 crew chief instructor prior to beginning the certification stage of the flight syllabus. The minimum passing grade for the 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.
2. The IUT shall present to an enlisted WTI or MAWTS-1 crew chief one of the classes listed in the CH-53 Crew Member AG Academic Course prior to completing the certification stage of the flight syllabus.
3. The IUT will demonstrate to an enlisted WTI or MAWTS-1 crew chief instructor the ability to instruct aerial gunnery training.
4. The following flights will be evaluated by an enlisted WTI or MAWTS-1 crew chief instructor.

## Certification Flight Syllabus

AG 542

1 CH-53

D/NS

**Goal:** Demonstrate instructional techniques during aerial gunnery at a moving target, either towed aerial banner, moving land target, or shadow gunnery.

### Requirements:

1. Evaluate instructional techniques during a moving target shoot emphasizing the following:
  - a. Weapons terminology
  - b. Sectors of fire
  - c. Lookout doctrine
  - d. Weapons preparation
  - e. Safety
  - f. Malfunctions and stoppages
  - g. Crew member responsibilities
  - h. Crew served weapons checklist application
  - i. Range estimation and lead computations
  - j. Situational awareness
  - k. Instructor technique
  - l. Crew coordination
  - m. LASER procedures
  - n. NVD usage

**Ordnance:** 500 .50 Cal

**External Support Requirements:** Range/Ordnance request

AG 543

2 CH-53

NS

**Goal:** Demonstrate instructional techniques during aerial gunnery employment while utilizing NVDs in a multi-aircraft shoot.

**Requirements:** Evaluate the IUTs instructional abilities during an NVG aerial gunnery flight emphasizing the following:

- a. Weapons terminology.
- b. Sectors of fire.
- c. Lookout doctrine.
- d. Weapons preparation.
- e. NVD usage.
- f. LASER procedures.
- g. Safety.
- h. Malfunctions and stoppages.
- i. Crew member responsibilities.
- j. Crew served weapons checklist application.
- k. Range estimation and lead computations.
- l. Situational awareness.
- m. Instructor techniques.
- n. Crew coordination

**Ordnance:** 500 .50 Cal

**External Support Requirements:** Range/Ordnance request

## **RECERTIFICATION REQUIREMENTS**

### **Refresher:**

1. Previously designated CH-53 AGIs returning to the CH-53 that require refresher training in accordance with MCO P3500.14 must complete a recertification course. Upon recertification by an enlisted WTI or MAWTS-1 crew chief, the AGI designation can be made at the discretion of the squadron commanding officer.
2. The following comprises the recertification process:
  - a. IUT must meet all prerequisites previously listed.
  - b. IUT must complete the AG 542 and AG 543 sorties, evaluated by an enlisted WTI or MAWTS-1 crew chief instructor.

**Transition:** Crew member designated as an AGI in an aircraft other than the CH-53 that transition to the CH-53 must meet the prerequisites and complete the AG 542 and AG 543 sorties evaluated by an enlisted WTI or MAWTS-1 crew chief instructor.

**Conversion:**

1. Crew members designated as an AGI converting within the CH-53 series that do not require refresher training as defined by MCO P3500.14 retain their AGI certification and can be designated an AGI at the discretion of the commanding officer.
2. Crew members designated as an AGI in an aircraft other than the CH-53 that undergo conversion training to the CH-53 must meet the prerequisites and complete the AG 542 and AG 543 sorties evaluated by an enlisted WTI or MAWTS-1 crew chief instructor.

## CH-53 TAIL GUNNERY INSTRUCTOR (TGI) CERTIFICATION COURSE

**Course Objective:** To certify a CH-53 Weapons and Tactics Instructor as a Tail Gunnery Instructor (TGI) capable of safely conducting academic and airborne instruction in the employment of crew served weapons in all aspects of tactical flight from the ramp position.

**Length:** IUT: 1 classroom hour, 2 sorties

Cert: 1 sortie

**Notes:** The CH-53 TGI Certification Course is developed by MAWTS-1. Upon certification by a MAWTS-1 crew chief instructor, the TGI designation per specific weapons systems may be made at the discretion of the squadron Commanding Officer.

### **Prerequisites:**

1. Designated Weapons and Tactics Instructor.

### **IUT STAGE**

#### **IUT Academic Syllabus:**

1. The TGI under training (IUT) shall review the MAWTS-1 Aerial Gunnery Manual (chapter 4) and the CH-53 Tactical Manual (Vol I chapters 6 and 7).
2. The IUT shall review and be capable of presenting the GAU-21 class listed in the CH-53 Crew Member AG Academic Course.
3. The academic syllabus shall 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 completed within six (6) months following the first IUT flight. If six months have elapsed since completion of any IUT flight, that flight must be reflown prior to completing the final certification flight.
2. A MAWTS-1 crew chief instructor will instruct the following flights.

AG 544

1 CH-53

D

**Goal:** Develop instructional techniques during day tail gunnery.

#### **Requirements:**

1. Evaluate instructional techniques in the usage and application of the following:
  - a. Weapons terminology
  - b. Sectors of fire
  - c. Lookout doctrine
  - d. Weapons preparation
  - e. Safety
  - f. Malfunctions and stoppages
  - g. Crew member responsibilities
  - h. Crew served weapons checklist application

- i. Range estimation and lead computations
- j. Situational awareness
- k. Instructor technique
- l. Crew coordination

**Ordnance:** 300 .50 Cal

**External Support Requirements:** Range/Ordnance request

AG 545

1 CH-53

N/S

**Goal:** Develop instructional techniques during NVD tail gunnery.

**Requirements:** Evaluate instructional techniques in the usage and application of the following:

- a. Weapons terminology.
- b. Sectors of fire.
- c. Lookout doctrine.
- d. Weapons preparation.
- e. NVD usage.
- f. LASER procedures.
- g. Safety.
- h. Malfunctions and stoppages.
- i. Crew member responsibilities.
- j. Crew served weapons checklist application.
- k. Range estimation and lead computations.
- l. Situational awareness.
- m. Instructor techniques.
- n. Crew coordination

**Ordnance:** 300 .50 Cal

**External Support Requirements:** Range/Ordnance request

## **CERTIFICATION STAGE**

### **Certification Academic Syllabus**

1. The IUT shall successfully complete a written exam for each weapon system, administered by a MAWTS-1 crew chief instructor prior to beginning the certification stage of the flight syllabus. The minimum passing grade for the test 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 IUT will demonstrate to a MAWTS-1 crew chief instructor the ability to instruct tail gunnery training.
4. The following flight will be evaluated by a MAWTS-1 crew chief instructor.

### **Certification Flight Syllabus**

AG 546

2 CH-53

N/S

**Goal:** Demonstrate instructional techniques during NVD tail gunnery employment while utilizing NVDs in a multi-aircraft shoot.

**Requirements:** Evaluate the IUTs instructional abilities during an NVG tail gunnery flight emphasizing the following:

- a. Weapons terminology.
- b. Sectors of fire.
- c. Lookout doctrine.
- d. Weapons preparation.
- e. NVD usage.
- f. LASER procedures.
- g. Safety.
- h. Malfunctions and stoppages.
- i. Crew member responsibilities.
- j. Crew served weapons checklist application.
- k. Range estimation and lead computations.
- l. Situational awareness.
- m. Instructor techniques.
- n. Crew coordination

**Ordnance:** 300 .50 Cal

**External Support Requirements:** Range/Ordnance request

## **CH-53 CREW CHIEF NIGHT SYSTEMS FAMILIARIZATION INSTRUCTOR (NSFI) CERTIFICATION COURSE**

**Course Objective:** To certify a CH-53 crew chief as a Night Systems Familiarization Instructor (NSFI) capable of safely conducting instruction of the familiarization phase of Night Vision Device (NVD) flights.

**Length:** IUT: 1 classroom hour 2 sorties  
Cert: 1 hour class presentation, 1 hour test, and 1 sortie

### **Notes:**

1. The CH-53 Crew Chief NSFI Certification Course is developed by MAWTS-1 and is designed to be taught by an enlisted NSFI, NSI, WTI, or MAWTS-1 crew chief instructor. Upon certification by the NSI, WTI, or MAWTS-1 crew chief instructor, the NSFI designation may be made at the discretion of the squadron commanding officer.
2. Night systems familiarization training is defined as basic night vision device orientation and use. Flight areas include low work, touch and go landings, emergencies, CALs, and preplanned navigation flights.

### **Prerequisites:**

1. Night Systems Qualified (NSQ) and current in accordance with MCO P3500.14 and MCO P3500.16.
2. Designated TERFI.

### **IUT STAGE**

#### **IUT Academic Syllabus:**

1. The NSFI crew chief under training (IUT) shall review the MAWTS-1 NVD Manual and the CH-53 Tactical Manual (Vol I & II).
2. The IUT shall review and be capable of presenting all classes listed in the CH-53 crew member Night Systems Academic Course.

#### **IUT Flight Syllabus:**

1. The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus will be completed within six (6) months following the first IUT flights. If six months has elapsed since the completion of any IUT flight, that flight must be reflight prior to completing the final certification flight.

2. The following flights will be instructed by a NSF1, NSI or WTCCI crew chief instructor:

NVD 560 1 CH-53 N

**Goal:** Evaluate the IUTs ability to instruct low work and touch and go maneuvers utilizing NVDs under HLL conditions as defined by MCO P3500.14.

**Requirements:**

1. Review low work, pattern work, touch and go, and simulated emergencies, with emphasis on instructional technique.
2. Brief and discuss visual illusions, depth perception, NVG failures, NVG lighting techniques, and NVG training restrictions.

**Ordnance:** N/A

**External Support Requirements:** N/A

NVD 561 1 CH-53 N

**Goal:** Evaluate the IUTs ability to instruct CALs, and External training under HLL conditions as defined by MCO P3500.14.

**Requirements:**

1. Review and conduct CALs at LZs which meets the special considerations for landing zones outlined in the MAWTS-1 NVD Manual.
2. Review and conduct External operations emphasizing the following:
  - a. Distance estimation
  - b. Depth perception
  - c. Crew comfort level
  - d. Obstacle clearance
  - e. Lookout doctrine
  - f. Emergencies (both aircraft and goggles)
  - g. Standard terminology
  - h. External operations (terminology, voice reports, and setup procedures).

**Ordnance:** N/A

**External Support Requirements:** N/A

## CERTIFICATION STAGE

### Certification Academic syllabus

1. The IUT shall present to the enlisted NSI, WTI, or MAWTS-1 crew chief Instructor one of the classes listed in the CH-53 Crew Member NS Academic Course, as determined by the NSI, WTI, or MAWTS-1 crew chief instructor, before completing the certification stage of the flight syllabus.
2. The IUT shall successfully complete a written NSFI exam administered by a NSI, WTI, or MAWTS-1 crew chief instructor prior to beginning the certification stage of the flight syllabus. 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 IUT will demonstrate to the NSI, WTI, or MAWTS-1 crew chief instructor the ability to instruct night systems operations.
4. This flight will be evaluated by a NSI, WTI, or MAWTS-1 crew chief instructor.

NVD 562

2 CH-53

N

**Goal:** Evaluate the IUTs ability to instruct NVG familiarization training during navigation, CALs, and formation flying under HLL conditions as defined by MCO P3500.14.

### Requirements:

1. Review and conduct a navigation route (50 NM minimum) at or above 200ft AGL.
2. Brief and discuss map preparation, route planning, visual illusions, depth perception, NVG failures, and inadvertent IMC.
3. Conduct Formation flying emphasizing the following:
  - a. Closure rate
  - b. Aircraft lighting
  - c. Light signals
  - d. Lookout responsibilities
  - e. Target fixation

**Ordnance:** N/A

**External Support Requirements:** N/A

## **RECERTIFICATION REQUIREMENTS**

### **Refresher:**

1. Previously designated CH-53 crew chief NSFIs or NSIs returning to the CH-53 that require refresher training in accordance with MCO P3500.14 must complete the NSFI rectification course. Upon rectification by an enlisted NSI, WTI or MAWTS-1 crew chief instructor, the NSFI designation can be made by the squadron commanding officer.
2. The following comprises the recertification process:
  - a. IUT must meet all prerequisites previously listed.
  - b. The IUT must complete the NVD 562 flight, evaluated by an NSI, WTI, or MAWTS-1 crew chief instructor.

**Transition:** Crew chiefs designated as an NSI or NSFI in an aircraft other than the CH-53, that transition to the CH-53 must meet the prerequisites and fly NVD 562 evaluated by an enlisted NSI, WTI, or MAWTS-1 crew chief instructor.

### **Conversion:**

1. Certified NSFI crew chiefs converting within the CH-53 series that do not require refresher training as defined by MCO P3500.14 retain their NSFI certification and can be designated an NSFI at the discretion of the commanding officer.
2. Crew chiefs designated as an NSI or NSFI in an aircraft other than the CH-53, that transition to the CH-53 must meet the prerequisites and fly NVD 562 evaluated by an NSI, WTI, or MAWTS-1 crew chief instructor.

## **CH-53 CREW CHIEF TERRAIN FLIGHT INSTRUCTOR (TERFI) CERTIFICATION COURSE**

**Course Objective:** To certify a CH-53 crew chief as a terrain flight Instructor (TERFI) capable of safely conducting ground and airborne instruction of the CH-53 terrain flight syllabus outlined in MCO P3500.16.

**Length:** IUT: 1 classroom hours, 1 sortie  
Cert: 1 hour class presentation, 1hour test and 1 sortie

**Notes:** The CH-53 Crew Chief TERFI Certification Course is developed by MAWTS-1. Upon certification by an enlisted WTI or MAWTS-1 crew chief instructor, the TERFI designation may be made at the discretion of the squadron commanding officer.

**Prerequisites:** Combat qualified stage complete, terrain flight qualified (TERFQ) and current in accordance with MCO P3500.14 and MCO P3500.16.

### **IUT STAGE**

#### **IUT Academic Syllabus:**

1. The TERFI crew chief under training (IUT) shall review the CH-53 Tactical Manual (Vol I and II) prior to the certification flight.
2. The IUT shall review and be capable of teaching all classes listed in the CH-53 Crew Member TERF Academics Course prior to beginning the IUT stage of the flight syllabus.

**IUT Flight Syllabus:** The squadron will ensure that the IUT is prepared for certification. During the IUT stage an enlisted WTI or MAWTS-1 crew chief instructor will demonstrate to the IUT proper TERFI techniques during TERF syllabus flights outlined in MCO P3500.16.

### **CERTIFICATION STAGE**

#### **Certification Academic Syllabus**

1. The crew chief IUT will demonstrate to a WTI or MAWTS-1 crew chief instructor the ability to conduct terrain flight instruction.
2. The following sorties will be evaluated by the WTI or MAWTS-1 crew chief instructor:
3. The TERF 570 may be flown in conjunction with the TERF 571.

4. The IUT shall present one of the classes listed in the CH-53 Crew Member TERF Academics Course to a WTI or MAWTS-1 crew chief instructor prior to finishing the certification process.
5. The IUT shall successfully complete a written TERFI Exam administered by a WTI or MAWTS-1 crew chief instructor prior to beginning the certification stage of the flight syllabus. 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.

### **Certification Flight syllabus**

TERF 570 1 CH-53 D

**Goal:** Demonstrate instructional techniques during terrain flight, navigation and external operations.

**Requirements:** Demonstrate instructional techniques in assisting the pilot at all TERF altitudes with emphasis on lookout doctrine, crew coordination, obstacle clearance, and external operations.

- a. Standard terminology
- b. Mission procedures
- c. Emergency procedures
- d. Brown out/white out
- e. Closure rates

**Ordnance:** N/A

**External Support Requirements:** N/A

TERF 571 2 CH-53 D

**Goal:** Demonstrate instructional techniques during multi-aircraft terrain flight and navigation.

**Requirements:** Demonstrate instructional techniques in assisting the pilot at all TERF altitudes with emphasis on lookout doctrine, crew coordination, navigational assistance, and obstacle clearance.

**Ordnance:** N/A

**External Support Requirements:** N/A

## **RECERTIFICATION REQUIREMENTS**

### **Refresher:**

1. Designated CH-53 crew chief TERFIs returning to the CH-53 that require refresher training in accordance with MCO P3500.14 must complete a TERFI recertification course. Upon recertification by an enlisted WTI or MAWTS-1 crew chief instructor, the TERFI designation can be made by the squadron commanding officer.
2. The following comprises the TERFI recertification process:
  - a. IUT must meet all prerequisites previously listed.
  - b. IUT must complete the TERF 571 sortie evaluated by a WTI or MAWTS-1 crew chief instructor.

**Transition:** Crew chiefs designated as a TERFI in an aircraft other than the CH-53, that transition to the CH-53 must complete the TERF 570, 571 sortie evaluated by an enlisted WTI or MAWTS-1 crew chief instructor.

### **Conversion:**

1. Crew chiefs designated within the CH-53 series that do not require refresher training as defined in MCO P3500.14 retain their TERFI certification and can be designated a TERFI at the discretion of the commanding officer.
2. Crew chiefs designated as a TERFI in an aircraft other than the CH-53 that undergo conversion training must complete the TERF 570, 571 sortie evaluated by an enlisted WTI or MAWTS-1 crew chief instructor.

## **CH-53 CREW CHIEF DEFENSIVE MEASURES INSTRUCTOR (DMI) CERTIFICATION COURSE**

**Course Objective:** To certify the CH-53 crew chief as an instructor capable of safely conducting ground and airborne instruction of the CH-53 defensive measures syllabus outlined in MCO P3500.16.

**Length:** IUT: 1 classroom hour, 2 sorties  
Cert: 1 hour class presentation, 1hour test, and 1 sortie

**Notes:** The CH-53 Crew Chief DMI Certification Course is developed by MAWTS-1. Upon certification by a MAWTS-1 crew chief instructor, the DMI designation may be made at the discretion of the squadron commanding officer.

### **Prerequisites:**

1. Designated TERFI.
2. Defensive Measures Qualified (DMQ) and current IAW MCO P3500.14 and P3500.16.

### **IUT STAGE**

#### **IUT Academic Syllabus:**

1. The DMI crew chief under training (IUT) shall review the MAWTS-1 Helicopter DM Guide, the CH-53 Tactical Manual (Vol I & II), and the AFTTP 3-1..
2. The IUT shall review and be capable of teaching all classes listed in the CH-53 Crew Member DM Academics Course prior to beginning the IUT 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 completed 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 following flights will be instructed by an enlisted DMI, WTI, or MAWTS-1 crew chief instructor.

**Goal:** Demonstrate instructional techniques during a 2 V Ground Threat.

**Requirements:**

1. Review multi-aircraft DM against a ground threat. Discuss the capabilities, limitations, and envelopes of the threat system. Demonstrate instructional techniques in the usage and application of the following:
  - a. Aircrew coordination
  - b. Crew comfort level
  - c. Lookout doctrine
  - d. Situational awareness
  - e. Use of ALE-39, APR-39, ALQ157, AAR-47
  - f. Tactical formation Maneuvering
  - g. Obstacle clearance
  - h. Standard terminology
  - i. Wingman position
  - j. Closure rate
  - k. Supporting roles
  - l. Threat recognition
  - m. DM training rules
  - n. Use of .50 caliber machine gun

**Ordnance:** 40 flare, 20 chaff 2/XM-218 machine guns(No ordnance)

**External Support Requirements:** N/A

**Goal:** Demonstrate the ability to instruct 2V1 FW/RW DM tactics.

**Requirements:**

1. Review helicopter 2V1 DM with a fixed wing or rotary wing aggressor aircraft. Discuss the capabilities, limitations, and envelopes of the aggressor aircraft. Discuss weapons and ASE employment. Demonstrate instructional technique during a 2V1 DM flight emphasizing the following:
  - a. Aircrew coordination
  - b. Crew comfort level
  - c. Lookout doctrine
  - d. Situational awareness
  - e. Use of ALE-39, APR-39, ALQ157, AAR-47



## **Requirements:**

1. The IUT will demonstrate instructional techniques in the usage and application of the following:
  - a. Aircrew coordination
  - b. Crew comfort level
  - c. Lookout doctrine
  - d. Situational awareness
  - e. Use of ALE-39, APR-39, ALQ157, AAR-47
  - f. Tactical formation Maneuvering
  - g. Obstacle clearance
  - h. Standard terminology
  - i. Wingman position
  - j. Closure rate
  - k. Supporting roles
  - l. Threat recognition
  - m. DM training rules
  - a. Use of .50 caliber machine gun
2. The IUT will demonstrate a working knowledge of the capabilities, limitations, and envelopes of the threat aircraft.
3. Discuss and simulate weapons and ASE employment.

**Ordnance:** 40 flare, 20 chaff, 2/XM-218 machine guns(no ordnance)

**External Support Requirements:** N/A

## **RECERTIFICATION REQUIREMENTS**

### **Refresher:**

1. Designated CH-53 Crew Chief DMIs returning to the CH-53 that require refresher training in accordance with MCO P3500.14 must complete a DMI recertification course. Upon recertification by MAWTS-1 crew chief instructor, the DMI designation can be made at the discretion of the commanding officer.
2. The following comprises the recertification process:
  - a. IUT must meet all prerequisites previously listed.
  - b. IUT must complete the DM 582 flight evaluated by a MAWTS-1 crew chief instructor.

**Transition:** Crew chiefs designated as a DMI in an aircraft other than the CH-53 that transition to the CH-53 must complete the entire CH-53 Crew Chief DMI Certification Course as previously listed.

**Conversion:**

1. Crew chiefs certified as a DMI converting within the CH-53 series that do not require refresher training as defined in MCO P3500.14 retain their DMI certification and can be designated a DMI at the discretion of the commanding officer.
2. Crew chiefs designated as a DMI in an aircraft other than the CH-53 that convert to the CH-53 must complete the entire CH-53 Crew Chief DMI Certification Course as previously listed.

## **CH-53 CREW CHIEF NIGHT SYSTEMS INSTRUCTOR (NSI) CERTIFICATION COURSE**

**Course Objective:** To certify a CH-53 crew chief as a Night Systems Instructor (NSI) capable of safely conducting ground and airborne instruction of the CH-53 Night Vision Device (NVD) flight syllabus as outlined in MCO P3500.16.

**Length:** IUT: 1 classroom hour, 2 sorties  
Cert: 1 hour class presentation, 1 hour test , and 1 sortie

### **Notes:**

1. The CH-53 Crew Chief NSI Certification Course is developed by MAWTS-1. Upon certification by a MAWTS-1 crew chief instructor, the NSI designation can be made at the discretion of the squadron commanding officer.
2. It is recommended that the NSI candidate possess a total of 90 hours of Night Vision Goggle time, 40 hours of which shall be Low Light level.

### **Prerequisites:**

1. Night Systems Qualified (NSQ) and current in accordance with MCO P3500.14 and MCO P3500.16.
2. Designated TERF Instructor

### **IUT STAGE**

#### **IUT Academic Syllabus:**

1. The NSI crew chief under training (IUT) shall review the MAWTS-1 NVD Manual and the CH-53 Tactical Manual (Vol I & II).
2. The IUT shall review and be capable of presenting the class listed in the CH-53 Crew Member NS Academic Course.

#### **IUT Flight Syllabus:**

1. The squadron will ensure that the IUT is prepared for certification. The certification stage of the flight syllabus will be completed within six (6) months following the first IUT flight. If six months have elapsed since completion of any IUT flight, that flight must be reflown prior to completing the final certification flight.

2. The following flights will be instructed by an enlisted NSI, WTI, or MAWTS-1 crew chief instructor.

NVD 590 1 CH-53 NS

**Goal:** Develop IUTs ability to instruct low work, pattern work, single aircraft CALs and externals utilizing NVDs.

**Requirements:**

1. Brief and discuss IMC procedures, aircraft lighting, NVD failures, crew coordination, comfort levels, and externals.
2. Assist the pilots in the conduct of low work, touch and go landings, single aircraft CALs, and externals. Must show proficiency and conduct a minimum of two lifts and drop offs, emphasizing the following:
  - a. Distance Estimation
  - b. Depth perception
  - c. Crew comfort level
  - d. Obstacle clearance
  - e. Lookout doctrine
  - f. Emergencies (both aircraft and goggles)
  - g. Standard terminology
  - h. External operations (terminology, voice reports, and setup procedures)

**Ordinance:** N/A

**External Support Requirements:** N/A

NVD 591 2 CH-53 NS

**Goal:** Conduct multi-aircraft CALs and assist pilots during TERF Navigation emphasizing instructional techniques.

**Requirements:**

1. Brief and discuss NVD failures, IMC, illusions of terrain flight, crew coordination, crew comfort levels, and standard terminology.
2. The IUT will demonstrate instructional techniques while assisting the pilot in CALs and navigation emphasizing instructional techniques in the following:



terrain flight, crew coordination, aircraft lighting, comfort levels, wingman position calls and standard terminology.

2. External operations must be conducted. The IUT must demonstrate proficiency and conduct a minimum of two lifts and drop offs. The externals may be conducted under HLL conditions as defined in MCO P3500.14. Brief and discuss terminology, voice reports, set-up procedures, emergencies over the load, and emergencies while carrying the load.
3. The IUT will demonstrate instructional techniques while assisting the Pilots in section CALs and Navigation at TERF Altitudes. Emphasizing:
  - a. Crew coordination
  - b. Obstacle clearance
  - c. Terrain suitability
  - d. Standard terminology
  - e. Mission procedures
  - f. Emergency procedures (both aircraft and NVGs)
  - g. Look out Doctrine
  - h. Wingman's position updates
  - i. Situational Awareness
  - j. Instructor Technique

**Ordnance:** N/A

**External Support Requirements:** N/A

## **RECERTIFICATION REQUIREMENTS**

### **Refresher:**

1. Previously designated CH-53 crew chief NSIs returning to the CH-53 that require refresher training in accordance with MCO P3500.14 must complete the NSI recertification course. Upon recertification by a MAWTS-1 crew chief instructor, the NSI designation can be made by the squadron commanding officer.
2. The following comprises the rectification course:
  - a. IUT must meet all prerequisites previously listed.
  - b. IUT must complete NVD 592 evaluated by a MAWTS-1 crew chief instructor.

**Transition:** Crew chiefs designated as an NSI in an aircraft other than the CH-53 that transition to the CH-53 must complete the entire CH-53 Crew Chief NSI

certification course as previously listed.

**Conversion:**

1. Crew chiefs 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.
2. Crew chiefs designated as an NSI in an aircraft other than the CH-53 that undergo conversion to the CH-53 must complete the entire CH-53 Crew Chief NSI Certification Course as previously listed.

### CH-53 CREW CHIEF TRAINING SYLLABUS

EVENT	DATE	INSTRUCTOR
<b>COMBAT READY</b>		
TACTICAL AIRCREW CONSIDERATIONS AND RESPONSIBILITIES		
<b>INTERNAL LOADS (INT)</b>		
INT 200 (N) (NS)		
INT 201 (N) (NS)		
<b>FORMATION FLIGHT (FORM)</b>		
NVG INTRO TO NVG'S		
NVG NIGHT ENVIRONMENT		
NVG ADJUSTMENT PROCEDURES		
NVG MISPERCEPTIONS AND ILLUSIONS		
NVG NIGHT OPERATIONS		
FORM 210		
FORM 211 N NS		
<b>CONFINED AREA LANDINGS (CAL)</b>		
CAL 220		
CAL 221		
CAL 222 N NS		
CAL 223 N NS		
<b>TERRAIN FLIGHT (TERF)</b>		
TERRAIN FLIGHT FOR ENLISTED AIRCREW		
TERF 230		
TERF 231		
TERF 232 N NS		
TERF 233 N NS		
<b>EXTERNAL LOADS</b>		
EXT 240		
EXT 241		
EXT 242 N NS		
EXT 243 N NS		
<b>FLEET CARRIER LANDING PRACTICE (FCLP)</b>		
FCLP 271		
FCLP 272 N		
FCLP 273 N NS		
<b>AIR TO GROUND GUNNERY (AG)</b>		
FUNDAMENTALS OF AERIAL GUNNERY		
XM-218/GAU-16 MACHINE GUN		
AG 280		
AG 281		
<b>TACTICS BASIC RESPONSIBILITIES</b>		
BASIC PRINCIPLES OF ESCORT		
TAC 290		
TAC 291 N NS		
<b>COMBAT QUALIFIED</b>		
<b>CONFINED AREA LANDINGS</b>		
CAL 320 N NS		
CAL 321 N NS		
<b>TERRAIN FLIGHT</b>		
TERF 330 N NS		
TERF 331 N NS		
<b>EXTERNAL LOADS</b>		
EXT 341		
EXT 342 N NS		
EXT 343 N NS		

EVENT	DATE	INSTRUCTOR
<b>DEFENSIVE MEASURES (DM)</b>		
BASIC PRINCIPLES OF ELETRONIC WARFARE		
DEFENSIVE MEASURES/DEFENSIVE AIR COMBAT TACTICS FOR ENLISTED AIRCREW (PART 1)		
DEFENSIVE MEASURES (PART 2)		
DM 350		
RADAR SAM THREAT TO ASSLT SUPT		
IR SAM THREAT TO ASSLT SUPT		
AAA THREAT TO ASSLT SUPT		
AN/ALE 39 SYSTEMS BRIEF FOR		
AIRCRAFT SURVIVABILITY EQUIPMENT		
<b>CARRIER QUALIFICATION (CQ)</b>		
CQ 370		
CQ 371 N		
CQ 372 N NS		
<b>AIR TO GROUND GUNNERY</b>		
LASER SAFETY		
AG 380 N NS		
AG 381 N NS		
<b>TACTICS (LOW AND MEDIUM THREAT)</b>		
TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL (TRAP)		
TAC 390		
TAC 391 N NS		
MOUT		
NEO EXECUTION		
GCE RAID		
ACEOI		
<b>GENERAL SUPPORT ACADEMICS</b>		
ROE AND THE LAWS OF WAR		
<b>FULL COMBAT QUALIFIED</b>		
<b>HELICOPTER INSERTION/EXTRACTION TECHNIQUE (HIE)</b>		
FAST ROPE		
RAPPEL OPERATIONS		
HIE 400 (N) (NS)		
HIE 401		
HIE 402 (N) (NS)		
<b>INTERNAL LOADS (INT) CH-53E ONLY</b>		
TACTICAL BULK FUEL DELIVERY		
INT 410 (N) (NS)		
<b>DEFENSIVE MEASURES (DM)</b>		
DM 450		
DM 451		
ATTACK HELO THREAT		
FW THREAT TO ASSUALT SUPPORT		
<b>NUCLEAR BIOLOGICAL, AND CHEMICAL</b>		
NBC 460 (N) (NS)		
<b>TACTICS</b>		
TAC 480 (N) (NS)		
TAC 482 (N) (NS)		
<b>MOVING TARGET GUNNERY</b>		
MTG 490		

NAME: \_\_\_\_\_

SSN: \_\_\_\_\_

## CH-53 CREW CHIEF TRAINING SYLLABUS

EVENT	DATE	INSTRUCTOR
<b>REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS</b>		
<b>INSTRUCTOR TRAINING</b>		
<b>AERIAL GUNNERY INSTRUCTOR (AGI)</b>		
FUNDAMENTALS OF AERIAL		
XM-218/GAU16 MACHINE GUN		
LASER SAFETY		
TRAINING THE AERIAL GUNNER		
AG 540		
AG 541 N NS		
CLASS PRESENTATION		
EXAM		
AG 542 N NS		
AG 543		
<b>NIGHT SYSTEMS FAMILIARIZATION INSTRUCTOR (NSFI)</b>		
NIGHT ENVIRONMENT		
INTRODUCTION TO NVG's		
MISPERCEPTIONS AND		
ADJUSTMENTS PROCEDURES		
NIGHT OPERATIONS		
NVD 560 N NS		
NVD 561		
CLASS PRESENTATION		
EXAM		
NVD 562 N NS		
<b>TERRAIN FLIGHT INSTRUCTOR (TERFI)</b>		
TERF FOR ENLISTED AIRCREW		
TACTICAL AIRCREW		
CONSIDERATIONS AND		
TERF 570		
CLASS PRESENTATION		
EXAM		
TERF 571		
<b>DEFENSIVE MEASURES INSTRUCTOR (DMI)</b>		
DM/DACT FOR ENLISTED AIRCREW		
DEFENSIVE MEASURES PART 2		
IR SAM THREAT TO ASSLT SUPT		
AAA THREAT TO RW AIRCRAFT		
FW THREAT TO ASSLT SUPT		
AN/ALE 39 SYSTEMS BRIEF FOR		
AIRCRAFT SURVIVABILITY		
EQUIPMENT		
DM 580		
DM 581		
CLASS PRESENTATION		
EXAM		
DM 582		
<b>NIGHT SYSTEMS INSTRUCTOR (NSI)</b>		
NIGHT ENVIRONMENT		
INTRODUCTION TO NVGs		
MISPERCEPTIONS AND		
ADJUSTMENT PROCEDURES		
NIGHT OPERATIONS		
TACTICS IN THE NIGHT ENV		
NVD 590		
NVD 591		
CLASS PRESENTATION		
EXAM		
NVD 592		

NAME: \_\_\_\_\_

SSN: \_\_\_\_\_