

CHAPTER 2

CH-46E CREW CHIEF/AERIAL GUNNER/OBSERVER  
 (INTERIM APPROVED 3 Aug 04)

	<u>PARAGRAPH</u>	<u>PAGE</u>
MARINE MEDIUM HELICOPTER SQUADRON - CH-46E UNIT TEMPLATE . . . . .	200	2-3
PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND TRANSITION CREW CHIEF . . . . .	201	2-7
POI FOR BASIC AND TRANSITION AERIAL GUNNER/OBSERVER . . . . .	202	2-7
POI FOR CONVERSION CREW CHIEF . . . . .	203	2-7
POI FOR REFRESHER CREW CHIEF . . . . .	204	2-7
POI FOR MODIFIED REFRESHER CREW CHIEF . . . . .	205	2-7
POI FOR REFRESHER AERIAL GUNNER/OBSERVER . . . . .	206	2-8
GROUND/ACADEMIC TRAINING COURSES OF INSTRUCTION . . . . .	210	2-8
FLIGHT TRAINING FOR BASIC AND TRANSITION CREW CHIEF . . . . .	220	2-8
FLIGHT TRAINING FOR CONVERSION CREW CHIEF . . . . .	221	2-9
FLIGHT TRAINING FOR REFRESHER CREW CHIEF . . . . .	222	2-10
FLIGHT TRAINING FOR SECONDARY MOS CREW CHIEF . . . . .	223	2-12
FLIGHT TRAINING FOR BASIC AND TRANSITION AERIAL GUNNER/OBSERVER . . . . .	224	2-13
FLIGHT TRAINING FOR CONVERSION AERIAL GUNNER/OBSERVER . . . . .	225	2-14
FLIGHT TRAINING FOR REFRESHER AERIAL GUNNER/OBSERVER . . . . .	226	2-15
INSTRUCTOR TRAINING . . . . .	227	2-16
REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS . . . . .	228	2-16
SPECIAL FLIGHT TRAINING . . . . .	229	2-16
GROUND/FLIGHT/SIMULATOR/PERFORMANCE REQUIREMENTS . . . . .	230	2-16
CORE SKILL INTRODUCTION PHASE . . . . .	231	2-18
CORE SKILL BASIC PHASE . . . . .	232	2-35
CORE SKILL ADVANCED PHASE . . . . .	233	2-54
CORE PLUS PHASE . . . . .	234	2-74
INSTRUCTOR TRAINING . . . . .	240	2-91

	<u>PARAGRAPH</u>	<u>PAGE</u>
REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS . . . . .	250	2-92
GRADUATE LEVEL COURSES . . . . .	251	2-93
SPECIAL TRAINING . . . . .	252	2-93
ORDNANCE REQUIREMENTS . . . . .	260	2-97

FIGURES

2-1	MOS 6172 REFLY INTERVAL, COMBAT READINESS PERCENTAGE (CRP) . . . . .	2-98
2-2	AERIAL GUNNER AND OBSERVER REFLY INTERVAL, CRP . . . . .	2-101
2-3	CREW CHIEF FLIGHT UPDATE CHAINING . . . . .	2-103
2-4	AERIAL GUNNER/OBSERVER FLIGHT UPDATE CHAINING . . . . .	2-105

CHAPTER 2

CH-46E CREW CHIEF/AERIAL GUNNER/OBSERVER

200. MARINE MEDIUM HELICOPTER SQUADRON - CH-46E UNIT TEMPLATE

**NOTE**

The capabilities defined and described in the core capability and unit template sections are provided to ensure each like-squadron maintains a common base of training and depth of capabilities. When resources permit, and when in the judgment of the commander additional training would significantly increase the unit's war fighting capability, training to a level above these base capabilities is permitted. It is incumbent upon and expected of the commander to balance any increase in the depth of core capabilities against the long-term health and readiness of his unit while staying within resource constraints.

1. Table Of Organization

12 CH-46E  
28 Pilots  
19 Crew Chiefs  
19 Aerial Gunner/Observers

2. Squadron Core Capability

a. A core capable CH-46 unit is able to sustain 20 sorties on a daily basis during contingency/ combat operations. The sortie rates are based on 1.5 hour average sortie duration and assumes  $\geq$  70 percent FMC aircraft and  $\geq$  90 percent T/O aircrew on hand. If unit FMC aircraft  $<$  70 percent or T/O aircrew  $<$  90 percent, core capability will be degraded by a like percentage. A core capable unit is able to accomplish all tasks designated in the unit METL from a main base, expeditionary base, or amphibious platform.

3. METL/Core Skill Matrix. CH-46 core skills directly support the METL as follows:

METL	CH-46 CORE SKILL						
	FAM	CAL	EXT	FORM	TERF	NVG (HLL)	NVG (LLL)
a. Conduct Shipboard Deck helicopter Landing qualifications	X	X				X	X
b. Conduct Sea and Air Deployment Operations	X	X	X	X	X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X	X	X	X
f. Conduct Joint Personnel Recovery	X	X		X	X	X	X
g. Conduct Noncombatant Evacuation	X	X		X	X	X	X

METL	AG	EW	DM	MAT	HIE	TAC	NBC	CQ
a. Conduct shipboard deck helicopter landing qualification								X
b. Conduct Sea and Air Deployment Operations	X	X		X		X	X	X
c. Conduct Air Assault Operations and Air Assault	X	X	X	X	X	X	X	X
d. Conduct Amphibious Assault and Raid Operations	X	X	X	X	X	X	X	X
e. Distribute Supplies and Provide Transport Service	X	X	X	X		X	X	X
f. Conduct Joint Personnel Recovery	X	X	X	X	X	X		X
g. Conduct Noncombatant Evacuation	X			X		X		X

4. CH-46 Core Model Minimum Requirements. Squadron core competency reflects the minimum level of competency a squadron must achieve to perform its core capability. Squadron core competency is measured in terms of minimum unit Core Skill Proficiency (CSP) and minimum numbers of flight leaders per paragraphs a. and b. below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit CSP). In order to be considered proficient in a core skill (individual CSP), a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below. The standard CH-46 crew consists of 2 Pilots, a Crew Chief, and an AG/O.

CORE SKILL	CH-46 Unit CSP Requirements Squadron			
	Pilots	Crew Chiefs	AG/O	Crews
FAM	16	8	8	8
CAL	16	8	8	8
EXT	12	6	6	6
FORM	16	8	8	8
TERF	16	8	8	8
NVG (HLL)	16	8	8	8
NVG (LLL)	16	8	8	8
AG	12	6	6	6
EW	12	6	6	6
DM	12	6	6	6
MAT	12	6	6	6
HIE	12	6	6	6
TAC	12	6	6	6
NBC	12	6	6	6
CQ	12	6	6	6

(1) Events Required to Attain Individual CSP. To initially attain CSP, a crewmember must successfully complete all of the T&R events listed in the chart below for that core skill.

T&R MANUAL, CH-46E

CH-46 Crew Chief	FAM	CAL	EXT	FORM	TERF	NVG (HLL)	NVG (LLL)
T&R event requirements to attain competency	201	211 212 213	221 392	231	241 242 243	251 252 253 254 255 256 257	311 312 313 314

CH-46 Crew Chief	AG	EW	DM	MAT	HIE	TAC	NBC	CQ
T&R event requirements to attain competency	281 282 283 321 322	331	341	351	361 362	371 372 374 375	430	291 293 300 301

CH-46 AG/O	FAM	CAL	EXT	FORM	TERF	NVG (HLL)	NVG (LLL)
T&R event requirements to attain competency	201	211 212	392	231	241 242 243	251 252 253 254 255 256 257	311 312 313 314

CH-46 AG/O	AG	EW	DM	MAT	HIE	TAC	NBC	CQ
T&R event requirements to attain competency	281 282 283 321 322	331	341	-	362	371 372 374 375	430	293 300 301

(2) Events Required to Maintain Individual CSP. To maintain CSP, a crewmember must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

CH-46 Crew Chief	FAM	CAL	EXT	FORM	TERF	NVG (HLL)	NVG (LLL)
T&R event requirements to maintain competency	R201	R212	R221 R392	R231	R243	R251 R253 R254 R257	R311 R312 R313 R314

CH-46 Crew Chief	AG	EW	DM	MAT	HIE	TAC	NBC	CQ
T&R event requirements to maintain competency	R282 R283 R322	R331	R341	R351	R361	R371 R372 R374 R375	R430	R291 R293 R300 R301

CH-46 AG/O	FAM	CAL	EXT	FORM	TERF	NVG (HLL)	NVG (LLL)
T&R event requirements to maintain competency	R201	R212	R392	R231	R243	R251 R253 R254 R257	R311 R312 R313 R314

CH-46 AG/O	AG	EW	DM	MAT	HIE	TAC	NBC	CQ
T&R event requirements to maintain competency	R282 R283 R322	R331	R341	-	-	R371 R372 R374 R375	R430	R293 R300 R301

5. Qualifications And Designations Tables. The tables below delineate T&R events required to be completed to attain initial qualifications and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification. Designations are command specific. Therefore, if the crew chief/AGO has not had PCS or PCA orders since previous designation letter, no additional designation letter is required. Follow-on commands shall repeat "initial documentation procedure."

Qualification (TRACKING CODE)	Initial Event Qualification Requirements
NATOPS (600)	IAW OPNAVINST 3710.7.
TERF	241, 242, 243
CQ	300, 301
DM	341, 441, 442
NSQ-HLL	251, 252, 253, 254, 255, 256, 257
NSQ-LLL	311, 312, 313, 314
AG (EAC)	281,282,283,321,322
TGO	481,482

Designation (TRACKING CODE)	Designation Requirements
TERFI	IAW MAWTS-1 Course Catalog
DMI	IAW MAWTS-1 Course Catalog
NSI	IAW MAWTS-1 Course Catalog
WTI	IAW MAWTS-1 Course Catalog
AGI	IAW MAWTS-1 Course Catalog
NSFI	IAW MAWTS-1 Course Catalog
NSSI	IAW MAWTS-1 Course Catalog
TGI	IAW MAWTS-1 Course Catalog

6. Enlisted Instructor Qualifications. As a minimum, for a squadron to be considered Core Competent, it must possess the following numbers of aircrew in the listed instructor categories. (Note: If the squadron is < T/O, required numbers are reduced by a like %).

INSTRUCTOR DESIGNATION	Pilots	C/C
TERFI	6	4
DMI	2	2
NSI	4	4
WTI	2*	2**
AGI	N/A	4+
TGI	N/A	1

\*One shall be assigned as the squadron WTI.

\*\*One shall be assigned in Operations as the squadron enlisted WTI.

+AG/O's holding AGI designation can not be included in this number.

201. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND TRANSITION CREW CHIEF

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-22	Core Skill Introduction	FRS
23-29	Core Skill Basic	Tactical Squadron
30-38	Core Skill Advanced	Tactical Squadron
39-48	Core Plus	Tactical Squadron

202. POI FOR BASIC AND TRANSITION AERIAL GUNNER/OBSERVER

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-16	Core Skill Basic	Tactical Squadron
17-20	Core Skill Advanced	Tactical Squadron
21-24	Core Plus	Tactical Squadron

203. POI FOR CONVERSION CREW CHIEF

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-22	Core Skill Introduction	FRS
23-29	Core Skill Basic	Tactical Squadron
30-38	Core Skill Advanced	Tactical Squadron
39-48	Core Plus	Tactical Squadron

204. POI FOR REFRESHER CREW CHIEF

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
0	Core Skill Introduction	Tactical Squadron
1-10	Core Skill Basic	Tactical Squadron
11-18	Core Skill Advanced	Tactical Squadron
19-26	Core Plus	Tactical Squadron

205. POI FOR MODIFIED REFRESHER CREW CHIEF

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-3	Core Skill Basic	Tactical Squadron
4-8	Core Skill Advanced	Tactical Squadron
9-12	Core Plus	Tactical Squadron

206. POI FOR REFRESHER AERIAL GUNNER/OBSERVER

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-13	Core Skill Basic	Tactical Squadron
14-18	Core Skill Advanced	Tactical Squadron
19-22	Core Plus	Tactical Squadron

210. GROUND/ACADEMIC TRAINING COURSES OF INSTRUCTION. Utilize academic courseware as outline in the Instructional System Development (ISD) program and the Chapter 6 and 9 of the MAWTS-1 Course Catalog.

220. FLIGHT TRAINING FOR BASIC AND TRANSITION CREW CHIEF

1. Core Skill Introduction

<u>STAGE</u>	<u>NO. EVENTS ACFT/SIM</u>	<u>NO. HOURS ACFT/SIM</u>	<u>CRP ACFT/SIM</u>
Familiarization	4/0	6.5/0.0	14.0/0.0
Navigation	2/0	3.0/0.0	9.5/0.0
Confined Area Landings	2/0	3.0/0.0	9.5/0.0
Formation	2/0	3.0/0.0	9.0/0.0
External Loads	1/0	1.5/0.0	4.5/0.0
Terrain Flight	1/1	2.0/0.0	4.0/0.0
Crew Chief Evaluation	2/0	3.5/0.0	9.5/0.0
<b>TOTAL FOR PHASE</b>	<b>14/1</b>	<b>22.5/0.0</b>	<b>60.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>15</b>	<b>22.5</b>	<b>60.0%</b>
<b>ACCUMULATION FOR BASIC POI</b>	<b>15</b>	<b>22.5</b>	<b>60.0%</b>

2. Core Skill Basic

<u>STAGE</u>	<u>NO. EVENTS ACFT/SIM</u>	<u>NO. HOURS ACFT/SIM</u>	<u>CRP ACFT/SIM</u>
Familiarization	1/0	1.5/0.0	0.5/0.0
Confined Area Landings	3/0	4.5/0.0	2.0/0.0
External Cargo Operations	1/0	1.5/0.0	1.0/0.0
Formation	1/0	1.5/0.0	0.5/0.0
Terrain Flight	3/0	4.5/0.0	2.0/0.0
Night Vision Devices (HLL)	7/0	10.5/0.0	5.0/0.0
Aerial Gunnery	3/1	4.5/1.5	2.5/0.0
Carrier Qualification	3/0	3.0/0.0	1.5/0.0
<b>TOTAL FOR PHASE</b>	<b>22/1</b>	<b>31.5/1.5</b>	<b>15.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>23</b>	<b>33.0</b>	<b>15.0%</b>
<b>ACCUMULATION FOR BASIC POI</b>	<b>38</b>	<b>55.5</b>	<b>75.0%</b>

3. Core Skill Advanced

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>	<u>CRP</u> <u>ACFT/SIM</u>
Carrier Qualification	2/0	2.5/0.0	2.0/0.0
Night Vision Devices (LLL)	4/0	6.0/0.0	4.0/0.0
Aerial Gunnery	2/1	3.0/1.5	3.0/0.0
Electronic Warfare	1/0	1.5/0.0	0.5/0.0
Defensive Measures	1/0	1.5/0.0	1.0/0.0
Mountain Area Training	1/0	1.5/0.0	1.0/0.0
Helicopter Insertion/Extraction	2/0	2.0/0.0	2.0/0.0
Tactics	4/0	6.0/0.0	5.0/0.0
Externals	1/0	1.5/0.0	1.5/0.0
<b>TOTAL FOR PHASE</b>	<b>17/1</b>	<b>25.5/1.5</b>	<b>20.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>18</b>	<b>27</b>	<b>20.0%</b>
<b>ACCUMULATION FOR BASIC POI</b>	<b>56</b>	<b>82.5</b>	<b>95.0%</b>

4. Core Plus

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>	<u>CRP</u> <u>ACFT/SIM</u>
Tactics	2/0	3.0/0.0	1.0/0.0
Externals	1/0	1.5/0.0	0.3/0.0
Nuclear, Biological, and Chemical	2/0	2.0/0.0	0.5/0.0
Defensive Measures	2/0	3.0/0.0	0.6/0.0
Mountain Area Training	2/0	3.0/0.0	0.4/0.0
Helicopter Insertion/Extraction	4/0	4.0/0.0	1.2/0.0
Simulator Familiarization	0/1	0.0/1.5	0.1/0.0
Tail Gunnery	2/0	3.0/0.0	0.6/0.0
Carrier Qualification	1/0	1.0/0.0	0.3/0.0
<b>TOTAL FOR PHASE</b>	<b>16/1</b>	<b>20.5/1.5</b>	<b>5.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>17</b>	<b>22.0</b>	<b>5.0%</b>
<b>TOTALS FOR BASIC POI</b>	<b>73</b>	<b>104.5</b>	<b>100.0%</b>

221. FLIGHT TRAINING FOR CONVERSION CREW CHIEF1. Core Skill Introduction

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Familiarization	4/0	6.5/0.0
Navigation	2/0	3.0/0.0
Confined Area Landings	2/0	3.0/0.0
Formation	2/0	3.0/0.0
External Loads	1/0	1.5/0.0
Terrain Flight	1/1	2.0/0.0
Crew Chief Evaluation	2/0	3.5/0.0
<b>TOTAL FOR PHASE</b>	<b>14/1</b>	<b>22.5/0.0</b>
<b>COMBINED TOTALS</b>	<b>15</b>	<b>22.5</b>
<b>ACCUMULATION FOR CONVERSION POI</b>	<b>15</b>	<b>22.5</b>

2. Core Skill Basic

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Familiarization	1/0	1.5/0.0
Confined Area Landings	3/0	4.5/0.0
External Cargo Operations	1/0	1.5/0.0
Formation	1/0	1.5/0.0
Terrain Flight	1/0	1.5/0.0
Night Vision Devices (HLL)	6/0	9.0/0.0
Aerial Gunnery	3/1	4.5/1.5
Carrier Qualification	3/0	3.0/0.0
<b>TOTAL FOR PHASE</b>	<b>19/1</b>	<b>27.0/1.5</b>
<b>COMBINED TOTALS</b>	<b>20</b>	<b>28.5</b>
<b>ACCUMULATION FOR CONVERSION POI</b>	<b>35</b>	<b>51.0</b>

3. Core Skill Advanced

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Carrier Qualification	2/0	2.5/0.0
Night Vision Devices (LLL)	4/0	6.0/0.0
Aerial Gunnery	2/1	3.0/1.5
Electronic Warfare	1/0	1.5/0.0
Defensive Measures	1/0	1.5/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	2/0	2.0/0.0
Tactics	4/0	6.0/0.0
Externals	1/0	1.5/0.0
<b>TOTAL FOR PHASE</b>	<b>18/1</b>	<b>25.5/1.5</b>
<b>COMBINED TOTALS</b>	<b>19</b>	<b>27.0</b>
<b>ACCUMULATION FOR CONVERSION POI</b>	<b>54</b>	<b>77.0</b>

4. Core Plus

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Tactics	2/0	3.0/0.0
Externals	1/0	1.5/0.0
Nuclear, Biological, and Chemical	2/0	2.0/0.0
Defensive Measures	2/0	3.0/0.0
Mountain Area Training	2/0	3.0/0.0
Helicopter Insertion/Extraction	4/0	4.0/0.0
Simulator Familiarization	0/1	0.0/1.5
Tail Gunnery	2/0	3.0/0.0
Carrier Qualification	1/0	1.0/0.0
<b>TOTAL FOR PHASE</b>	<b>16/1</b>	<b>20.5/1.5</b>
<b>COMBINED TOTALS</b>	<b>17</b>	<b>22.0</b>
<b>TOTALS FOR CONVERSION POI</b>	<b>71</b>	<b>101.0</b>

222. FLIGHT TRAINING FOR REFRESHER CREW CHIEF

1. Core Skill Introduction

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>

**NOT APPLICABLE**

2. Core Skill Basic

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Familiarization	1/0	1.5/0.0
Confined Area Landings	2/0	3.0/0.0
External Cargo Operations	1/0	1.5/0.0
Formation	1/0	1.5/0.0
Terrain Flight	2/0	3.0/0.0
Night Vision Devices (HLL)	5/0	7.5/0.0
Aerial Gunnery	2/1	3.0/1.5
Carrier Qualification	3/0	3.0/0.0
<b>TOTAL FOR PHASE</b>	<b>17/1</b>	<b>24.0/1.5</b>
<b>COMBINED TOTALS</b>	<b>18</b>	<b>25.5</b>
<b>ACCUMULATION FOR REFRESHER CREW CHIEF POI</b>	<b>18</b>	<b>25.5</b>

3. Core Skill Advanced

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Carrier Qualification	2/0	2.5/0.0
Night Vision Devices (LLL)	4/0	6.0/0.0
Aerial Gunnery	2/0	3.0/0.0
Electronic Warfare	1/0	1.5/0.0
Defensive Measures	1/0	1.5/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	2/0	2.0/0.0
Tactics	4/0	6.0/0.0
Externals	1/0	1.5/0.0
<b>TOTAL FOR PHASE</b>	<b>18/0</b>	<b>25.5/0.0</b>
<b>COMBINED TOTALS</b>	<b>18</b>	<b>25.5</b>
<b>ACCUMULATION FOR REFRESHER POI</b>	<b>36</b>	<b>51.0</b>

4. Core Plus

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Tactics	2/0	3.0/0.0
Externals	1/0	1.5/0.0
Nuclear, Biological, and Chemical	2/0	2.0/0.0
Defensive Measures	2/0	3.0/0.0
Mountain Area Training	2/0	3.0/0.0
Helicopter Insertion/Extraction	4/0	4.0/0.0
Simulator Familiarization	0/1	0.0/1.5
Tail Gunnery	2/0	3.0/0.0
Carrier Qualification	1/0	1.0/0.0
<b>TOTAL FOR PHASE</b>	<b>16/1</b>	<b>20.5/1.5</b>
<b>COMBINED TOTALS</b>	<b>17</b>	<b>22.0</b>
<b>TOTALS FOR REFRESHER POI</b>	<b>53</b>	<b>73.0</b>

223. FLIGHT TRAINING FOR SECONDARY MOS CREW CHIEF1. Core Skill Introduction

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Familiarization	1/0	1.5/0.0
Confined Area Landings	1/0	1.5/0.0
Formation	1/0	1.5/0.0
External Loads	1/0	1.5/0.0
Terrain Flight	1/0	1.5/0.0
Crew Chief Evaluation	<u>2/0</u>	<u>3.5/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>7/0</b>	<b>11.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>7</b>	<b>11.0</b>
<b>ACCUMULATION FOR SECONDARY MOS CREW CHIEF POI</b>	<b>7</b>	<b>11.0</b>

2. Core Skill Basic

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Confined Area Landings	2/0	3.0/0.0
External Cargo Operations	1/0	1.5/0.0
Terrain Flight	1/0	1.5/0.0
Night Vision Devices (HLL)	4/0	6.0/0.0
Aerial Gunnery	2/0	3.0/0.0
Carrier Qualification	<u>2/0</u>	<u>2.0/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>12/0</b>	<b>17.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>12</b>	<b>17.0</b>
<b>ACCUMULATION FOR SECONDARY MOS CREW CHIEF POI</b>	<b>19</b>	<b>28.0</b>

3. Core Skill Advanced

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Carrier Qualification	3/0	3.0/0.0
Night Vision Devices (LLL)	3/0	4.5/0.0
Aerial Gunnery	1/0	1.5/0.0
Defensive Measures	1/0	1.5/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	2/0	2.0/0.0
Tactics	4/0	6.0/0.0
Externals	<u>1/0</u>	<u>1.5/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>16/0</b>	<b>21.5/0.0</b>
<b>COMBINED TOTALS</b>	<b>16</b>	<b>21.5</b>
<b>ACCUMULATION FOR SECONDARY MOS CREW CHIEF POI</b>	<b>35</b>	<b>49.5</b>

4. Core Plus

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>
Tactics	2/0	3.0/0.0
Externals	1/0	1.5/0.0
Defensive Measures	2/0	3.0/0.0
Mountain Area Training	2/0	3.0/0.0
Helicopter Insertion/Extraction	4/0	4.5/0.0
Simulator Familiarization	0/1	0.0/1.5
Tail Gunnery	<u>2/0</u>	<u>3.0/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>13/1</b>	<b>18/1.5</b>
<b>COMBINED TOTALS</b>	<b>14</b>	<b>19.5</b>
<b>TOTALS FOR SECONDARY MOS CREW</b>	<b>49</b>	<b>69.0</b>
<b>CHIEF POI</b>		

224. FLIGHT TRAINING FOR BASIC AND TRANSITION AERIAL GUNNER/OBSERVER

1. Core Skill Introduction. Completion of OPNAV 3710 requirements to include flight physical, physiology, swim qualification and issue of non-crewmember flight orders constitutes completion of the Combat Capable Phase.

2. Core Skill Basic

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>	<u>CRP</u> <u>ACFT/SIM</u>
Familiarization	1/0	1.5/0.0	0.5/0.0
Confined Area Landings	2/0	3.0/0.0	1.0/0.0
Formation	1/0	1.5/0.0	0.5/0.0
Terrain Flight	3/0	4.5/0.0	2.0/0.0
Night Vision Devices (HLL)	7/0	10.5/0.0	6.0/0.0
Air-to-Ground	3/1	4.5/1.5	4.0/0.0
Carrier Qualification	<u>2/0</u>	<u>2.0/0.0</u>	<u>1.0/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>19/1</b>	<b>27.5/1.5</b>	<b>15.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>20</b>	<b>29.0</b>	<b>15.0%</b>
<b>ACCUMULATION FOR BASIC POI</b>	<b>20</b>	<b>29.0</b>	<b>75.0%</b>

3. Core Skill Advanced

<u>STAGE</u>	<u>NO. EVENTS</u> <u>ACFT/SIM</u>	<u>NO. HOURS</u> <u>ACFT/SIM</u>	<u>CRP</u> <u>ACFT/SIM</u>
Carrier Qualification	2/0	2.0/0.0	2.0/0.0
Night Vision Devices (LLL)	4/0	6.0/0.0	5.0/0.0
Air-to-Ground	2/1	3.0/1.5	3.0/0.0
Electronic Warfare	1/0	1.5/0.0	1.0/0.0
Defensive Measures	1/0	1.5/0.0	1.0/0.0
Helicopter Insertion/Extraction	1/0	1.0/0.0	1.0/0.0
Tactics	4/0	6.0/0.0	6.0/0.0
Externals	<u>1/0</u>	<u>1.5/0.0</u>	<u>1.0/0/0</u>
<b>TOTAL FOR PHASE</b>	<b>16/1</b>	<b>22.5/1.5</b>	<b>20.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>17</b>	<b>24.0</b>	<b>20.0%</b>
<b>ACCUMULATION FOR BASIC POI</b>	<b>37</b>	<b>53.0</b>	<b>95.0%</b>

4. Core Plus

<u>STAGE</u>	NO. EVENTS	NO. HOURS	CRP
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Tactics	2/0	3.0/0.0	1.4/0.0
Externals	1/0	1.5/0.0	0.4/0.0
Nuclear, Biological, and Chemical	2/0	2.0/0.0	1.6/0.0
Defensive Measures	2/0	3.0/0.0	1.0/0.0
Mountain Area Training	1/0	1.5/0.0	0.5/0.0
Helicopter Insertion/Extraction	1/0	1.0/0.0	0.5/0.0
Tail Gunnery	2/0	3.0/0.0	1.0/0.0
<b>TOTAL FOR PHASE</b>	<b>11/0</b>	<b>15/0.0</b>	<b>5.0/0.0</b>
<b>COMBINED TOTALS</b>	<b>11</b>	<b>15</b>	<b>5.0%</b>
<b>TOTALS FOR BASIC POI</b>	<b>48</b>	<b>68.0</b>	<b>100.0%</b>

225. FLIGHT TRAINING FOR CONVERSION AERIAL GUNNER/OBSERVER

1. Core Skill Introduction Phase. Completion of OPNAV 3710 requirements to include flight physical, physiology, swim qualification and issue of non-crewmember flight orders constitutes completion of the Core Skill Introduction Phase.

2. Core Skill Basic

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Familiarization	1/0	1.5/0.0
Confined Area Landings	2/0	3.0/0.0
Formation	1/0	1.5/0.0
Terrain Flight	1/0	1.5/0.0
Night Vision Devices (HLL)	6/0	9.0/0.0
Air-to-Ground	3/0	4.5/0.0
Carrier Qualification	2/0	2.0/0.0
<b>TOTAL FOR PHASE</b>	<b>16/0</b>	<b>23/0.0</b>
<b>COMBINED TOTALS</b>	<b>16</b>	<b>23</b>
<b>ACCUMULATION FOR CONVERSION POI</b>	<b>16</b>	<b>23</b>

3. Core Skill Advanced

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Carrier Qualification	2/0	2.0/0.0
Night Vision Devices (LLL)	4/0	6.0/0.0
Air-to-Ground	2/0	3.0/0.0
Electronic Warfare	1/0	1.5/0.0
Defensive Measures	1/0	1.5/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	1/0	1.0/0.0
Tactics	4/0	6.0/0.0
Externals	1/0	1.5/0.0
<b>TOTAL FOR PHASE</b>	<b>17/0</b>	<b>24/0.0</b>
<b>COMBINED TOTALS</b>	<b>17</b>	<b>24</b>
<b>ACCUMULATION FOR CONVERSION POI</b>	<b>33</b>	<b>47</b>

4. Core Plus

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Tactics	2/0	3.0/0.0
Externals	1/0	1.5/0.0
Nuclear, Biological, and Chemical	2/0	2.0/0.0
Defensive Measures	2/0	3.0/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	1/0	1.0/0.0
Tail Gunnery	<u>2/0</u>	<u>3.0/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>11/0</b>	<b>15/0.0</b>
<b>COMBINED TOTALS</b>	<b>11</b>	<b>15</b>
<b>TOTALS FOR CONVERSION POI</b>	<b>44</b>	<b>62</b>

226. FLIGHT TRAINING FOR REFRESHER AERIAL GUNNER/OBSERVER

1. Core Skill Introduction. Completion of OPNAV 3710 requirements to include flight physical, physiology, swim qualification and issue of non-crewmember flight orders constitutes completion of this phase.

2. Core Skill Basic

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Familiarization	1/0	1.5/0.0
Confined Area Landings	1/0	1.5/0.0
Formation	1/0	1.5/0.0
Terrain Flight	1/0	1.5/0.0
Night Vision Devices (HLL)	5/0	7.5/0.0
Air-to-Ground	2/0	3.0/0.0
Carrier Qualification	<u>2/0</u>	<u>2.0/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>13/0</b>	<b>18.5/0.0</b>
<b>COMBINED TOTALS</b>	<b>13</b>	<b>18.5</b>
<b>ACCUMULATION FOR REFRESHER POI</b>	<b>13</b>	<b>18.5</b>

3. Core Skill Advanced

<u>STAGE</u>	NO. EVENTS	NO. HOURS
	<u>ACFT/SIM</u>	<u>ACFT/SIM</u>
Carrier Qualification	3/0	3.0/0.0
Night Vision Devices (LLL)	4/0	6.0/0.0
Air-to-Ground	1/0	1.5/0.0
Electronic Warfare	1/0	1.5/0.0
Defensive Measures	1/0	1.5/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	1/0	1.0/0.0
Tactics	4/0	6.0/0.0
Externals	<u>1/0</u>	<u>1.5/0.0</u>
<b>TOTAL FOR PHASE</b>	<b>17/0</b>	<b>24.5/0.0</b>
<b>COMBINED TOTALS</b>	<b>17</b>	<b>24.5</b>
<b>ACCUMULATION FOR REFRESHER POI</b>	<b>30</b>	<b>43.0</b>

4. Core Plus

<u>STAGE</u>	<u>NO. EVENTS ACFT/SIM</u>	<u>NO. HOURS ACFT/SIM</u>
Tactics	2/0	3.0/0.0
Externals	1/0	1.5/0.0
Nuclear, Biological, and Chemical	2/0	2.0/0.0
Defensive Measures	2/0	3.0/0.0
Mountain Area Training	1/0	1.5/0.0
Helicopter Insertion/Extraction	1/0	1.0/0.0
Tail Gunnery	2/0	3.0/0.0
<b>TOTAL FOR PHASE</b>	<b>11/0</b>	<b>15/0.0</b>
<b>COMBINED TOTALS</b>	<b>11</b>	<b>15</b>
<b>TOTALS FOR REFRESHER POI</b>	<b>41</b>	<b>58</b>

227. INSTRUCTOR TRAINING

<u>STAGE</u>	<u>NO. EVENTS ACFT/SIM</u>	<u>NO. HOURS ACFT/SIM</u>
Instructor Under Training	1	2.0

228. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

<u>STAGE</u>	<u>NO. EVENTS ACFT/SIM</u>	<u>NO. HOURS ACFT/SIM</u>
Annual NATOPS Evaluation	1	1.5

229. SPECIAL FLIGHT TRAINING

<u>STAGE</u>	<u>NO. EVENTS ACFT/SIM</u>	<u>NO. HOURS ACFT/SIM</u>
Arctic Weather Training	1	2.0
Desert Operations	1	2.0
CRM Training	1	2.0
Water Landings	1	1.0
<b>SPECIAL FLIGHT TOTAL</b>	<b>4</b>	<b>7.0</b>

230. GROUND/FLIGHT/SIMULATOR/PERFORMANCE REQUIREMENTS

1. General

a. Aircrews shall fly events annotated with an N at least 30 minutes after official sunset. Aircrews may fly events annotated with (N) at night.

b. Aircrews shall fly events annotated with an NS with NVDs for the entire flight. Events annotated with (NS) may be conducted at night utilizing NVDs.

c. All flights annotated with an E shall be evaluated per T&R Program Manual.

d. The Enlisted WTI shall ensure all Aircrew Training Forms (ATFs) are entered in section 3 of the APR for all initial events flown. These ATFs shall remain until a more current ATF replaces it.

e. Conversion and Refresher aircrews shall have ATFs entered in section 3 of the APR for all flights designated by a C or R in the flight description. These ATFs will replace ATFs previously entered in section 3.

f. Deferred events. Flight training events that are not flown in Core Skill Introduction training shall be flown in the subsequent stage of training.

g. Prior qualification. Crew chiefs who have been previously qualified but are not current will be programmed to fly the Refresher crew chief POI.

h. Designation as Aerial Gunner/Observer. After being qualified NSQ (LLL), AG and completion of RQD-600 an AGOUI may be designated an Aerial Gunner/Observer by the commanding officer.

i. Simulator Training. Although a current simulator does not exist, a request for an Aerial Gunner simulator has been forwarded.

j. Aircraft And Simulator Codes. These codes are assigned to delineate whether the event uses a simulator or an airframe. The codes are located in the event header following the POI codes. A= aircraft, S= simulator, A/S= aircraft preferred/simulator optional, S/A= simulator preferred/aircraft optional. Until an aircraft simulator becomes operational, unit commanders may waive appropriate syllabus events.

2. Evaluation Events. These events shall be flown with an experienced aerial gunner instructor or crew chief instructor designated for the specific flight instruction required.

a. A designated NATOPS Instructor/Assistant NATOPS Instructor shall evaluate RQD-600 for both the crew chief and aerial gunner/observer. AGOUI shall fly RQD-600 prior to being designated an aerial gunner/observer and after being qualified NSQ (LLL) and AG qualified.

b. A crew chief instructor proficient in a given event shall evaluate any initial event required for a Basic, Conversion, Transition, or Refresher crew chief or aerial gunner/observer. A qualified and designated crew chief evaluator or AGI will complete an ATF. Pilots and observers will not sign off crew chief ATFs with the exception of initial SFAM-470.

c. If the commanding officer has waived a syllabus event, the enlisted WTI must place a waiver letter in section 3 of the APR.

### 3. Syllabus Assignment

a. Basic and Transition crew chiefs will be assigned to fly the entire syllabus. Conversion and Refresher crew chiefs will fly those flights designated by a C or an R in the event description (CC center of page and AGO to the right). Basic and Transition aerial gunner/observers will fly the same syllabus as the respective crew chief except as noted in the crew requirements for each stage as listed in Figure 2-1.

b. Secondary MOS Crew Chief. To alleviate inventory shortages of primary MOS crew chiefs, authority is granted to individual unit commanders to train and designate personnel as secondary MOS 6172 only. The source population is restricted to personnel that are qualified as aerial gunner/observers from within the 61XX occupational field. Waivers for other MOSs may be requested via CMC (ASM) on a case by case basis.

(1) The number of secondary MOS crew chiefs that an individual unit commander is authorized to designate at any time is limited to the current staffing formula,  $1.6 \text{ CC} \times \text{PAA} = \text{\#CC}$ , minus primary designated crew chiefs

assigned. On-hand primary MOS crew chiefs shall have priority for crewmember orders and hazardous duty incentive pay.

(2) Secondary MOS crew chiefs shall complete normal NATOPS requirements to include flight physical, physiology, and water survival prior to flight. Consideration should be made for SERE training.

(3) Secondary MOS crew chiefs shall fly those flights designated by an O in the Core Skill Introduction phase of training. When the O coded events within the Core Skill Basic, Core Skill Advanced, and Core Plus phases of training are complete, the CCUI may be credited with the CRP from the entire phase of training.

(4) Prior to designation by the unit commander, the respective FRS instructor or MAG Crew Chief NATOPS Standardization Evaluators shall certify the individual's qualification to ensure MOS standardization. This certification shall include an open and closed book NATOPS exam, oral evaluation and a flight evaluation. Evaluation standards applicable to the primary 6172 MOS shall be strictly adhered to. A Core Skill Introduction NVG Stage evaluation flight shall be completed by the parent unit ENSI prior to the certification flight.

(5) Copies of all certification evaluations, NAVFLIRS, and OPNAV Form 3710/7 shall be forwarded to HMM(T)-164 for post certification review. The primary purpose of this review is to assist the model manager in tracking the certification process and identifies positive/negative trends in the training process.

c. Refresher Syllabus. The Refresher syllabus is predicated on the experience of the Refresher crew chief or aerial gunner/observer. A Refresher crew chief or aerial gunner/observer need not fly every event within a stage of training to be requalified in that stage. A crew chief or aerial gunner/observer in the Refresher syllabus should fly all R coded events. The commanding officer may tailor the Refresher syllabus to fit the experience of the Refresher crew chief or aerial gunner/observer per T&R Program Manual. When the R coded events within a stage of training are complete, the crew chief or aerial gunner/observer may be credited with the CRP for the entire stage of training. This assumes that the Refresher has previous proficiency in that stage of training. If the Refresher crew chief or aerial gunner/observer has no previous proficiency in a stage or particular event, then the Refresher shall fly the entire stage or all events not previously flown.

4. Refly Interval. Figure 2-1 shows refly interval and CRP for the 6172 MOS, and Figure 2-2 shows the refly interval and CRP for the aerial gunner/observer.

5. Crew Resource Management (CRM). CRM shall be briefed for all flights and/or events.

## 231. CORE SKILL INTRODUCTION PHASE

### 1. Familiarization (FAM)

a. Purpose. To develop preliminary skills as a crew chief in the CH-46E and become familiar with flight characteristics, aircraft systems, limitations, and emergency procedures. To develop proficiency in assisting pilots in all aspects of FAM flight, both day and night.

b. General

(1) These flights may be flown with any flight of the basic pilot POI.

(2) On FAM-109 the CCUI will act as an observer. Subsequent to FAM-109 the CCUI will act in the capacity of crew chief.

c. Crew Requirement. CCI/CCUI.

d. Ground/Academic Training. Prior to FAM-110, Aviation Physiology and flight physical, swim qualifications, and applicable ground training must be completed.

e. Flight Training. (4 Flights, 6.5 Hours).

FAM-109                    1.5                    C E 1 CH-46E A

Goal. Introduce ground and normal flight procedures.

Requirement

(1) Discuss

- (a) Use of ICS.
- (b) Standard terminology.
- (c) Voice procedures.
- (d) Interaction with pilots.
- (e) Lookout doctrine.
- (f) Estimating distances.
- (g) Emergency procedures.
- (h) Fuel surveillance.
- (i) Crew comfort levels.
- (j) Vertigo.
- (k) Takeoff and landing emergencies.
- (l) CRM.

1 Communication.

2 SA.

(2) Introduce

- (a) Basic crew duties.
- (b) Daily/turnaround inspections.
- (c) Servicing requirements.
- (d) Startup/shutdown procedures.

- (e) Hotseat procedures.
  - (f) Takeoff.
  - (g) Operation of communications equipment.
  - (h) Inflight lookout.
  - (i) Headwork.
  - (j) Aft station check procedures.
  - (k) Aircraft fueling procedures.
  - (l) Crew comfort levels.
  - (m) Depth perception.
  - (n) Taxiing/directing procedures.
  - (o) Back taxi procedures.
- (3) Review
- (a) Limitations.
  - (b) SOPs.
  - (c) Crew chief duties.
  - (d) Startup/shutdown procedures.
  - (e) Aircraft security: Ship/shore based procedures.

Performance Standards. Exhibit basic understanding of CH-46E aircrew duties.

Prerequisite

- (a) CRM.
- (b) Completion of plane captain oral sign-offs.

Ordinance. None.

External Syllabus Support. None.

FAM-110

1.5                      C,O E 1 CH-46E A

Goal. Introduce communications, passenger briefing, normal and emergency procedures.

Requirement

- (1) Discuss
  - (a) Standard terminology.
  - (b) Interaction with pilots.

- (c) Takeoff and landing emergencies.
- (d) Engine limitations.
- (e) Transmission limitations.
- (f) Inflight fire.
- (g) Smoke elimination.
- (h) CRM.

1 SA.

2 Leadership.

- (i) Ditching procedures.

(2) Introduce

- (a) Precautionary landings.
- (b) Emergency landings.
- (c) Autorotations.
- (d) SA.
- (e) Ground handling procedures.
- (f) Crew chief responsibilities during loading.
- (g) T&R Program Manual.
- (h) Aft station check procedures.

(3) Review

- (a) ICS usage.
- (b) Taxi procedures.
- (c) Station check procedures.
- (d) Hot fuel procedures.

Performance Standards. Demonstrate application of crew chief duties.

Prerequisite. FAM-109.

Ordinance. None.

External Syllabus Support. None.

FAM-117

1.5 C E 1 CH-46E A N

Goal. Introduce night operations.

Requirement

(1) Discuss

- (a) Lighting systems.
- (b) Night operations.
- (c) Estimating distances.
- (d) CRM.
  - 1 Adaptability/flexibility.
  - 2 Decision making.

(2) Introduce

- (a) Daily at night.
- (b) Turnaround at night.
- (c) Light discipline.
- (d) Aircraft lighting.
- (e) Airfield lighting.
- (f) Night lookout doctrine.

(3) Review

- (a) Night precautionary Landings.
- (b) Night emergency landings.
- (c) Overview of duties.
- (d) SA.
- (e) Night startup/shutdown procedures.
- (f) Limitations.
- (g) Hotseat procedures.

Performance Standards. Demonstrate a basic knowledge of night operations IAW NATOPS.

Prerequisite. FAM-110.

Ordinance. None.

External Syllabus Support. None.

FAM-119

2.0 C E 1 CH-46E A NS

Goal. Introduce NVD flight.

Requirement

(1) Discuss

- (a) Crew comfort levels.
- (b) NVD failures.
- (c) Depth perception.
- (d) Aircraft lighting.
- (e) Emergency procedures.
- (f) CRM.
  - 1 Mission analysis.
  - 2 Assertiveness.

(2) Introduce

- (a) Use of NVDs during low level operations.
- (b) Aircraft configuration.
- (c) Taxiing on NVDs.
- (d) Use of NVDs at an unlit field.
- (e) Ground relationships.

(3) Review

- (a) Communication.
- (b) Lookout doctrine.
- (c) Night startup/shutdown.
- (d) Aircraft lighting.
- (e) Taxiing signals.
- (f) Light discipline.
- (g) Crew duties.
- (h) Vertigo.

Performance Standards. Apply basic NVD skills as outlined in the MAWTS-1 NVD manual.

Prerequisite. Completion of NITE Lab and FAM-117.

Ordinance. None.

External Syllabus Support. None.

2. Navigation (NAV)

a. Purpose. To familiarize the CCUI with navigation responsibilities while navigating primarily using charts and maps.

b. General. At the completion of this stage, the CCUI will be able to demonstrate the ability to assist the pilots in all aspects of navigation.

c. Crew Requirement. CCI/CCUI.

d. Academic Training. FRS Navigation class.

e. Flight Training. (2 Flights, 3.0 Hours).

NAV-130                    1.5                    C E 1 CH-46E A (N)

Goal. Introduce flight duties during navigation.

Requirement

(1) Discuss

(a) Fuel management checks.

(b) Crew participation.

(c) CRM.

1 Communication.

2 Decision making.

(2) Introduce

(a) Use of appropriate maps and checkpoints.

(b) Time distance checks.

(c) Barrier features.

(d) Prominent terrain features.

(e) Additional crew chief responsibilities over unfamiliar terrain.

(f) Navigation procedures.

(3) Review

(a) Communication.

(b) SA.

(c) Night startup/shutdown.

(d) Aircraft lighting.

(e) Taxiing at night.

(f) Light discipline.

(g) Crew duties.

(h) Night lookout doctrine.

Performance Standards. Demonstrate ability to assist the pilots during navigation.

Prerequisite. FAM-110 (if flown at night, FAM-117).

Ordnance. None.

External Syllabus Support. None.

NAV-133

1.5 C E 1 CH-46E A NS

Goal. Introduce flight duties during NVD navigation.

Requirement

(1) Discuss

(a) Fuel management checks.

(b) Crew comfort Levels.

(c) NVD failures.

(d) Emergency procedures.

(e) CRM.

1 Adaptability/flexibility.

2 Mission analysis.

(2) Introduce

(a) Additional crew chief responsibilities over unfamiliar terrain on NVDs.

(3) Review

(a) Use of appropriate maps and checkpoints.

(b) Time distance checks.

(c) Barrier features.

(d) Prominent terrain features.

(e) Assisting pilots.

(f) Light discipline.

(g) Aft station checks.

Performance Standards. Demonstrate ability to assist pilots during NVD navigation.

Prerequisite. FAM-119 and NAV-130.

Ordnance. None.

External Syllabus Support. None.

3. Confined Area Landings (CAL)

- a. Purpose. To develop crew chief responsibilities during CALs.
- b. General. At the completion of this stage, the CCUI will be able to demonstrate the ability to assist in all aspects of CALs.
- c. Crew Requirement. CCI/CCUI.
- d. Academic Training. FRS CAL class.
- e. Flight Training. (2 Flights, 3 Hours).

CAL-141            1.5                    C E 1 CH-46E A

Goal. Introduce CAL responsibilities.

Requirement

(1) Discuss

- (a) Obstacle clearance.
- (b) Standard terminology.
- (c) Crew comfort levels.
- (d) Clearance in confined areas.
- (e) Emergencies during low level operations.
- (f) CRM.

1 Assertiveness.

2 Leadership.

(2) Introduce

- (a) Aircraft clearance while operating in confined areas.
- (b) Terrain suitability.
- (c) Main-mount landings.
- (d) Slope landings.
- (e) Waveoff.
- (f) Low level operations.

(3) Review

- (a) Crew responsibilities.

(b) Clearance calls.

Performance Standards. Demonstrate the ability to successfully crew the aircraft to the deck for a minimum of five landings.

Prerequisite. FAM-110.

Ordnance. None.

External Syllabus Support. Various CAL sites.

CAL-142

1.5 C,O E 1 CH-46E A NS

Goal. Introduce NVD CALs.

Requirement

(1) Discuss

- (a) Obstacle clearance.
- (b) Task saturation.
- (c) Crew comfort levels.
- (d) Waveoff.
- (e) Distance estimation.
- (f) Clearance in confined areas.
- (g) Emergency procedures.
- (h) CRM.

1 SA.

2 Assertiveness.

(2) Introduce

- (a) LZ lighting.
- (b) Aircraft clearance on NVDs.
- (c) LZ suitability.

(3) Review

- (a) Headwork.
- (b) Crew responsibilities.
- (c) Light discipline.
- (d) Clearance calls.
- (e) NVD failures.

(f) Depth perception.

Performance Standards. Demonstrate the ability to successfully call the aircraft to the deck utilizing NVDs a minimum of five times using standardized terminology.

Prerequisite. FAM-119 and CAL-141.

Ordinance. None.

External Syllabus Support. CAL sites suitable for NVD use.

4. Formation (FORM)

a. Purpose. To familiarize the CCUI with functions and responsibilities during formation flying.

b. General. At the completion of this stage, the CCUI will be able to demonstrate the ability to assist pilots in all aspects of formation flight.

c. Crew Requirement. CCI/CCUI.

d. Academic Training. FRS Formation Flying class.

e. Flight Training. (2 Flights, 3 Hours).

FORM-151            1.5                    C E 2 CH-46E A

Goal. Introduce formation flight/section CAL responsibilities.

Requirement

(1) Discuss

(a) Lost communications procedures.

(b) Crew chief responsibilities during inadvertent IMC.

(c) CRM.

1 Communication.

2 Leadership.

(2) Introduce

(a) Lookout procedures for wingman.

(b) Turn patterns.

(c) Breakup and rendezvous.

(d) Section takeoffs and landings to an unimproved surface.

(3) Review

(a) Crew responsibilities.

(b) SA.

- (c) Distance estimation.
- (d) Crew coordination.
- (e) Lookout doctrine.

Performance Standards

- (a) Maintain SA of wingman throughout evolution.
- (b) Demonstrate proper crew chief duties.
- (c) Utilize standard terminology.
- (d) Demonstrate proper distance estimation within two feet of actual height.

Prerequisite. CAL-141.

Ordinance. None.

External Syllabus Support. Availability of large LZ.

FORM-152

1.5 C, O E 2 CH-46E A

Goal. Review formation flight/section CAL responsibilities.

Requirement

(1) Discuss

- (a) Section CALs.
- (b) Lookout doctrine.
- (c) CRM.
  - 1 Adaptability/flexibility.
  - 2 Assertiveness.

(2) Introduce. Section takeoffs and landings to an approved surface.

(3) Review

- (a) Obstacle clearance.
- (b) SA.
- (c) Terrain suitability.
- (d) Crew coordination.
- (e) Wingman responsibilities.

Performance Standards

- (a) Maintain SA of wingman throughout evolution.

- (b) Demonstrate proper crew chief duties.
- (c) Utilize proper terminology.
- (d) Demonstrate proper distance estimation within two feet of actual height.

Prerequisite. CAL-151.

Ordinance. None.

External Syllabus Support. Availability of large LZ.

5. External Loads (EXT)

- a. Purpose. To develop CCUI skills necessary for external cargo operations.
- b. General. At the completion of this stage, the CCUI will be able to demonstrate the ability to assist the pilot during day external operations.
- c. Crew Requirement. CCI/CCUI.
- d. Academic Training. Review of NAVAIR 01-250-HDA-9.
- e. Flight Training. (1 Flight, 1.5 Hours).

EXT-161            1.5                    C,O E 1 CH-46E A

Goal. Introduce external cargo operations.

Requirement

(1) Discuss

- (a) Standard terminology.
- (b) Static discharge precautions.
- (c) Lost communications.
- (d) Hand signals.
- (e) Emergency procedures.
- (f) Emergency release procedures.
- (g) Crew duties.
- (h) CRM.

1 Decision making.

2 Communication.

(2) Introduce

- (a) Communications.
- (b) External operations.

- (c) Hook and pendant preflight.
- (d) Load release procedures.
- (3) Review
  - (a) Obstacle clearance.
  - (b) SA.

Performance Standards

- (a) Properly configure aircraft.
- (b) Successfully complete five pickups and dropoffs.
- (c) Demonstrate standard terminology.
- (d) Execute proper safety precautions.

Prerequisite. CAL-110.

Ordinance. None.

External Syllabus Support. External load.

5. Terrain Flight (TERF)

- a. Purpose. To introduce the CCUI to TERF maneuvers and to emphasize the importance of crew coordination, crew comfort level, and standard terminology.
- b. General. At the completion of this stage of flight, the CCUI will be able to demonstrate the ability to assist the pilots during day TERF maneuvers.
- c. Crew Requirement. CCI/CCUI.
- d. Academic Training. FRS TERF class.
- e. Flight Training. (1 Flight, 1.5 Hours).

TERF-171                      1.5                      C, O E 1 CH-46E A

Goal. Introduce TERF maneuvers.

Requirement

- (1) Discuss
  - (a) Obstacle clearance.
  - (b) Standard terminology.
  - (c) Crew comfort levels.
  - (d) Waveoff.
  - (e) Clearance in confined areas.

(f) Emergencies during low level operations.

(g) CRM.

1 Assertiveness.

2 Communication.

(2) Introduce

(a) Blade walk.

(b) Hover check theory.

(c) TERF maneuvers.

1 Bunts.

2 Rolls.

3 Masking and unmasking.

4 Spiral approach.

5 Low level quick stop.

6 Zoom climb.

(3) Review

(a) Crew responsibilities.

(b) Clearance calls.

Performance Standards. Demonstrate a basic understanding of TERF maneuvers.

Prerequisite. CAL-141.

Ordinance. None.

External Syllabus Support. Low level TERF area in controlled airspace.

6. Crew Chief Evaluation (CSIX)

a. Purpose. To review all duties and emergency procedures of a Core Skill Introduction crew chief per this syllabus and NATOPS publications.

b. General

(1) Completion of this stage meets the requirements for designation as a crew chief.

(2) The CCI shall be a designated NATOPS Evaluator and CRM Facilitator/Instructor.

c. Crew Requirement. CCI/CCUI.

d. Academic Training

(1) Completion of open/closed book and 12-week evaluations.

(2) Completion of plane captain syllabus.

e. Flight Training. (2 Flights, 3.5 Hours).

REW-181            1.5    C,O 1 CH-46E A (N)(NS)

Goal. Review duties, limitations, responsibilities, taxiing procedures, and emergency procedures.

Requirement

(1) Discuss

- (a) Preparation.
- (b) Time management.
- (c) Daily/turnaround procedures.
- (d) Startup/shutdown.
- (e) Taxi procedures.
- (f) Back taxi procedures.
- (g) Application of CRM.

(2) Introduce

- (a) Total crew chief responsibility for the aircraft.
- (b) Plane captain responsibilities.

(3) Review

- (a) Crew/passenger brief.
- (b) Aircraft configuration.
- (c) Emergency procedures.
- (d) Limitations.
- (e) ICS usage.
- (f) Estimating distances.
- (g) Safety precautions.
- (h) Systems knowledge.
- (i) Crew duties.
- (j) Lookout doctrine.

Performance Standards. Demonstrate proficiency as a crew chief as stated in the NATOPS and OPNAV 3710.7.

Prerequisite. All prior 100-level flights.

Ordinance. None.

External Syllabus Support. None.

CSIX-182

2.0 C, O E 1 CH-46E A (N)(NS)

Goal. Evaluate CCUI's systems knowledge of the CH-46E and the capability to perform duties as a Core Skill Introduction complete crew chief.

Requirement

(1) Discuss

- (a) Preparation.
- (b) Time management.
- (c) Daily/turnaround procedures.
- (d) Taxi procedures.
- (e) Aircraft systems.

(2) Introduce. N/A.

(3) Review

- (a) Crew/passenger brief.
- (b) Aircraft configuration.
- (c) Emergency procedures.
- (d) Limitations.
- (e) ICS usage.
- (f) Estimating distances.
- (g) Safety precautions.
- (h) Systems knowledge.
- (i) Crew duties.
- (j) Lookout doctrine.

Performance Standards. Demonstrate proficiency as a crew chief as stated in the NATOPS and OPNAV 3710.7.

Prerequisite. All prior 100-level flights.

Ordinance. None.

External Syllabus Support. None.

232. CORE SKILL BASIC PHASE

1. Familiarization (FAM)

a. Purpose. To enhance skills of crew functions and responsibilities during day or night flights.

b. General

(1) At the completion of this stage, the CC/AOUI will demonstrate the ability to assist the entire crew during day or night flights.

(2) FAM-201 is the initial FAM flight for the AOUI.

c. Crew Requirement. CC, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. Prior to beginning this stage, the CCUI or AOUI shall receive Tactical Aircrew Coordination and Responsibilities training from the MAWTS-1 ASP.

e. Flight Training. (1 Flight, 1.5 Hours).

<u>FAM-201</u>	<u>1.5</u>	<u>C,R 1 CH-46E A (N)</u>	<u>C,R</u>
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Goal. Develop lookout doctrine during FAM flights.

Requirement

(1) Discuss

- (a) Lookout responsibilities.
- (b) ICS procedures.
- (c) SA.
- (d) CRM.
- (e) Crew comfort levels.

(2) Introduce. Assisting the pilot during FAM operations.

(3) Review. Standard terminology and lookout doctrine.

Performance Standards. Demonstrate proper lookout doctrine and CRM.

Prerequisite. Tactical Aircrew Considerations and Responsibilities class from the MAWTS-1 ASP.

Ordinance. None.

External Syllabus Support. Landing areas.

2. Confined Area Landings (CAL)

a. Purpose. To develop crew coordination during confined area operations.

b. General. At the completion of this stage, the CC/AOUI will be able to demonstrate the ability to assist the pilots in day CALS.

c. Crew Requirement. CC, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. None.

e. Flight Training. (3 Flights, 4.5 Hours).

CAL-211                      1.5                      C 1 CH-46E A                      C

Goal. Review single aircraft CAL operations; develop skills with tactical approaches and departures.

Requirement

(1) Discuss

- (a) CRM.
- (b) Obstacle clearance.
- (c) Standard terminology.
- (d) Distance estimation.
- (e) Low altitude emergencies (i.e. landing in trees).
- (f) Rotor blade clearances (blade walk).
- (g) LZ evaluation.
- (h) Waveoff/brownout procedures.

(2) Review

- (a) Lookout doctrine.
- (b) ICS procedures.
- (c) Aircraft clearance and terrain suitability.
- (d) Distance estimation.

Performance Standards. Demonstrate the ability to clear the aircraft into confined areas for landings.

Prerequisite. FAM-201.

Ordinance. None.

External Syllabus Support. CAL zone.

CAL-212                      1.5                      C,R,O 2 CH-46E A (N)                      C,R

Goal. Conduct section CAL operations.

Requirement

(1) Discuss

- (a) CRM.
- (b) Lookout doctrine.
- (c) Obstacle clearance.
- (d) Distance estimation.
- (e) Wingman position.
- (f) Waveoff/brownout procedures.

(2) Introduce. Crew responsibilities during section CAL operations.

(3) Review. Formation and lookout procedures emphasizing responsibilities during section operations.

Performance Standards. Demonstrate aircrew responsibilities during section CALS.

Prerequisite. CAL-211 (if flown at night, CAL-213).

Ordnance. None.

External Syllabus Support. CAL zone.

CAL-213

1.5 C,R,O 1 CH-46E A N

Goal. Review unaided night CALs.

Requirement

(1) Discuss

- (a) CRM.
- (b) Obstacle clearance.
- (c) Common terminology.
- (d) Distance estimation.
- (e) Waveoff/brownout procedures.

(2) Review

- (a) Lookout doctrine.
- (b) ICS procedures.
- (c) Aircraft clearance and terrain suitability.
- (d) Night operations.
- (e) Aircraft lighting and light discipline.

Performance Standards. Demonstrate aircrew responsibilities during night unaided CALs.

Prerequisite. CAL-211.

Ordinance. None.

External Syllabus Support. CAL zone.

3. External Cargo Operations (EXT)

a. Purpose. To develop proficiency with external cargo operations and introduce external cargo operations in confined areas with close coordination of a Helicopter Support Team (HST).

b. General. At the completion of this stage, the CC/AOUI will be able to demonstrate the ability to assist the pilot in day external cargo operations from confined areas. CRM shall be discussed as applicable to each event.

c. Crew Requirement. CC, CC/CCUI.

d. Ground/Academic Training. Read appropriate chapters of the NATOPS Manual and NWP 3-22.5-CH-46E.

e. Flight Training. (1 Flight, 1.5 Hours).

EXT-221                    1.5                    C,R,O 1 CH-46E A

Goal. Conduct external load operations to a confined area.

Requirement

(1) Discuss

- (a) CRM.
- (b) Communication procedures.
- (c) Aircraft emergencies during external operations.
- (d) Load jettison procedures.
- (e) Capabilities and limitations of the hook.
- (f) Cargo hook preparation.
- (g) Standard terminology.
- (h) Lost communication procedures/hand signals.

(2) Introduce. HST procedures.

(3) Review. N/A.

Performance Standards. Demonstrate the ability to give commands to the pilot at the controls of the aircraft to effect hookup and delivery with minimal difficulty utilizing standard terminology while maintaining obstacle clearance.

Prerequisite. CAL-211.

Ordinance. None.

External Syllabus Support. HST, external load and pickup/drop zone.

4. Formation Flight (FORM)

a. Purpose. To review formation and introduce tactical formation maneuvering.

b. General. At completion of this stage, the CC/AOUI will demonstrate the ability to assist the pilot during day or night formation flight operations. CRM shall be discussed as applicable to each event.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. Review tactical formations as listed in the NWP 3-22.5-CH-46E, MAWTS-1 ASP, and DM Guide.

e. Flight Training. (1 Flight, 1.5 Hours).

FORM-231

1.5

C,R 2 CH-46E A

C,R

Goal. Review formation and introduce tactical formation maneuvering.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) Lead changes.
- (d) Standard terminology.
- (e) Tactical formation maneuvering.
- (f) Aircraft clearance.
- (g) Appropriate formation maneuvers against a F/W threat, R/W threat, IR missile threat, radar guided missile threat, and AAA threat.
- (h) Intra and inter aircraft communications.
- (i) Distance estimation.

(2) Introduce

- (a) Break turns, center turns, pinch/dig, cover, TAC turns, in-place turns, and cross turns.
- (b) Combat spread and combat cruise formations.

(3) Review

(a) Lookout procedures.

(b) Communication procedures.

Performance Standards. Demonstrate the ability to perform and understand TAC FORM maneuvering.

Prerequisite. FAM-201.

Ordinance. None.

External Syllabus Support. None.

5. Terrain Flight (TERF)

a. Purpose. To qualify the CC/AGOUI in TERF and TERF navigation and to emphasize the importance of crew coordination, crew comfort level, and standard terminology.

b. General

(1) An enlisted TERFI (ETERFI) is required for this stage of instructional flight.

(2) Successful completion of TERF-243 constitutes TERF qualified. A qualification letter signed by the commanding officer stating the CC/AGOUI is TERFQ is required. The original shall be placed in the CC/AGOUI NATOPS jacket, and a copy in the APR with a corresponding logbook entry.

(3) T&R Program Manual establishes TERF altitude restrictions and currency requirements.

c. Crew Requirement. CC/AO, ETERFI/CCUI or ETERFI/AOUI.

d. Ground/Academic Training

(1) CH-46 Crew Chief Terrain Flight (TERF) Course, listed in the MAWTS-1 Course Catalog prior to beginning this stage of training.

(2) Familiarity with NWP 3-22.5-CH-46E and T&R Program Manual.

e. Flight Training. (3 Flights, 4.5 Hours).

TERF-241            1.5            1 CH-46E A

Goal. TERF maneuvers.

Requirement

(1) Discuss

(a) CRM.

(b) Crew comfort levels.

(c) Obstacle clearance.

(d) Lookout doctrine.

- (e) Emergencies during low level operations.
  - (f) TERF maneuvers.
  - (g) Differences between TERF flight regimes.
- (2) Introduce. TERF maneuvers.
- (3) Review. TERF maneuvers and aircraft clearance.
- Performance Standards. Demonstrate knowledge of TERF maneuvers in tactical situations.

Prerequisite. None.

Ordinance. None.

External Syllabus Support. TERF area (restricted area preferred).

TERF-242

1.5            R 1 CH-46E A

Goal. Assist the pilots in navigation of a TERF route in the low level and contour profile.

Requirement

- (1) Discuss
- (a) CRM.
  - (b) Crew comfort level.
  - (c) Communication.
  - (d) Map/NAV procedures.
  - (e) Terrain recognition.
  - (f) Obstacle clearance.
- (2) Introduce. Assist pilots in navigation, use of checkpoints, barrier features and prominent terrain features.
- (3) Review. Map/Nav procedures and emergency procedures during low level operations.

Performance Standards. Assist pilots in navigation of a minimum of five checkpoints at or below 200' AGL remaining oriented on route within 500 meters.

Prerequisite. TERF-241.

Ordinance. None.

External Syllabus Support. TERF route (restricted area preferred).

TERF-2431.5C,R,O 2 CH-46E AC,R

Goal. Review TERF/Nav procedures and demonstrate the ability to navigate a TERF route in the contour and low level profiles. TERF evaluation/review.

Requirement

(1) Discuss

- (a) CRM.
- (b) CC/AO responsibilities during low altitude flight.
- (c) Communication.
- (d) Navigational assistance.
- (e) Lookout doctrine.
- (f) Low altitude emergency procedures.
- (g) Multi-aircraft operations.
- (h) Threat awareness.
- (i) Lead changes.
- (j) Tactical formation maneuvering.
- (k) Crew comfort level.
- (l) Map and navigation procedures.

(2) Review. TERF-241 and TERF-242.

Performance Standards. Demonstrate knowledge of terrain flight as it applies to the CH-46E and assist pilots in navigation of a minimum of five checkpoints at or below 200' AGL remaining oriented on route within 500 meters.

Prerequisite. TERF-242.

Ordinance. None.

External Syllabus Support. TERF route (restricted area preferred).

6. Night Vision Devices (NVD), High Light Level (HLL)

a. Purpose. To develop skill in the use of NVDS under light levels greater than .0022 lux (HLL)) as predicted by the computer generated light level calendar and to qualify the CC/AO in NVD (HLL) operations.

b. General

(1) All initial and Refresher flights require a Enlisted Night Systems Instructor (ENSI).

(2) Successful completion of NVD-257 constitutes Night Systems Qualified (NSQ)(HLL). A qualification letter, signed by the commanding officer stating the CC/AOUI is NSQ (HLL) is required to be qualified to carry troops under HLL conditions. The original shall be placed in the CC/AOUI's NATOPS jacket, and a copy in his APR with a corresponding logbook entry.

c. Crew Requirement. CC/AO, ENSI/CCUI or ENSI/AOUI.

d. Prerequisite. CAL-211.

e. Academic Training. CH-46 Night Systems Operations Course as listed the MAWTS-1 Course Catalog shall be completed prior to conducting NVD flights.

f. Flight Training. (7 Flights, 10.5 Hours).

NVD-251                    1.5                    C,R,O 1 CH-46E A NS                    C,R

Goal. Introduce NVD single aircraft CALs in HLL.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) NVD use and limitations.
- (d) NVD failures.
- (e) Emergencies.
- (f) Inadvertent IMC.
- (g) Aircraft lighting.
- (h) Light discipline
- (i) Use of IR searchlight.
- (j) Depth perception.
- (k) Obstacle clearance.

(2) Introduce. CALs at various unlit CAL sites.

(3) Review. CAL-211.

Performance Standards. Demonstrate the ability to conduct CALs under HLL conditions.

Prerequisite. CAL-211.

Ordinance. None.

External Syllabus Support. NVD landing zones.

NVD-252

1.5

C 2 CH-46E A NS

C

Goal. Conduct NVD formation flight in HLL.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) Lead changes.
- (d) Aircraft lighting.
- (e) Closure rate.
- (f) Distance estimation.
- (g) NVD procedures and emergencies.
- (h) Relative motion and depth perception problems at night.
- (i) Lookout doctrine.

(2) Introduce. NVD formation flight.

(3) Review. FORM-231.

Performance Standards. Demonstrate the ability to conduct formation flight while utilizing NVDs.

Prerequisite. FORM-231 and NVD-251.

Ordnance. None.

External Syllabus Support. None.

NVD-253

1.5

C,R,O 2 CH-46E A NS

C,R

Goal. Introduce section NVD tactical section approaches, landings, and departures to a confined area in HLL.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) NVD navigation techniques.
- (d) NVD failures.
- (e) Emergencies.
- (f) Inadvertent IMC.

- (g) Aircraft lighting.
- (h) Use of IR searchlight.
- (i) Depth perception.
- (j) Obstacle clearance.

(2) Review. Section takeoffs/landings at various unlit CAL sites.

Performance Standards. Demonstrate the ability to conduct section CALs while utilizing NVDs.

Prerequisite. CAL-212 and NVD-252.

Ordinance. None.

External Syllabus Support. NVD landing zones.

NVD-254

1.5                      C,R 3 OR MORE ACFT A NS                      C,R

Goal. Conduct NVD division formation and CALs.

Requirement

- (1) Discuss
  - (a) CRM.
  - (b) Crew comfort levels.
  - (c) NVD division takeoffs and landings.
  - (d) NVD formation techniques.
  - (e) Inadvertent IMC.
  - (f) Obstacle clearance.
  - (g) Lookout doctrine.
  - (h) Standard terminology.

(2) Introduce. NVD division CALs.

(3) Review. NVD-253.

Performance Standards. Demonstrate the ability to conduct NVD division CALs under HLL conditions.

Prerequisite. NVD-253.

Ordinance. None.

External Syllabus Support. NVD landing zones.

NVD-255

1.5                      1 CH-46E A NS

Goal. Conduct NVD TERF navigation.



(2) Introduce. NVD TERF NAV.

(3) Review

(a) NVD formation techniques to include parade position, cruise principles, crossovers, breakup and rendezvous and lead changes.

(b) NVD navigation techniques.

Performance Standards. Demonstrate the ability to assist the pilots in navigation of a minimum of five checkpoints at or below 200' AGL remaining oriented on route within 500 meters while utilizing NVDs.

Prerequisite. TERF qualified, NVD-252 and 255.

Ordinance. None.

External Syllabus Support. NVD TERF route (restricted area preferred).

NVD-257

1.5

C,R,O 2 CH-46E A NS

C,R

Goal. Conduct/evaluate NVD TERF formation, navigation, and section CALs.

Requirement

(1) Discuss

(a) CRM.

(b) Crew comfort levels.

(c) Tactical formations.

(d) NVD procedures and emergencies.

(e) Aircraft lighting.

(f) NVD navigation techniques.

(g) Low altitude emergencies.

(h) Inadvertent IMC.

Performance Standards. Demonstrate the ability to conduct NVD HLL TERF, navigation, formation flight, and CALS in a HLL environment.

Prerequisite. NVD-254, 255, and 256.

Ordinance. None.

External Syllabus Support. NVD landing zones and approved TERF route (restricted area preferred).

7. Air-to-Ground (AG)

a. Purpose. To develop proficiency/CRM skills with crew served weapons and aerial gunnery procedures.

b. General

(1) Initial instructional flights shall be conducted by a designated EWTI or AGI.

(2) At the completion of this stage, the aircrew will demonstrate knowledge of weapons systems and proficiency during day weapons delivery.

c. Crew Requirement. CC/AG, AGI/CCUI or AGI/AGOUI.

d. Ground/Academic Training

(1) Academic training will be conducted by a EWTI or AGI.

(2) CH-46 Crew Member Aerial Gunnery Academic Course, using the MAWTS-1 ASP. Courses are listed in the MAWTS-1 Course Catalog.

e. Simulator/Flight Training. (1 event, 1.5 Hours, 3 Flights, 4.5 Hours).

SAG-280

1.5

C S

C

Goal. Introduce the CCUI/AGUI to aerial gunnery procedures.

Requirement

(1) Discuss

- (a) CRM.
- (b) ICS procedures.
- (c) Safety.
- (d) Weapons conditions.
- (e) Weapons commands.
- (f) Weapons malfunctions/stoppages/emergencies.
- (g) Crew served weapons checklist application.
- (h) Muzzle awareness.
- (i) Weapons preparation/nomenclature.

(2) Introduce. Day aerial gunnery while firing on pre-briefed targets.

(3) Review. MAWTS-1 Aerial Gunnery Manual and CH-46E Tactical Manuals.

Performance Standards. Demonstrate the ability to conduct day aerial gunnery.



Requirement

(1) Discuss

- (a) CRM.
- (b) ICS procedures.
- (c) Safety.
- (d) Weapons conditions.
- (e) Weapons commands.
- (f) Weapon malfunctions/emergencies.
- (g) Crew served weapons checklist.
- (h) Aiming techniques.
- (i) Muzzle awareness.
- (j) Weapons preparation/nomenclature.
- (k) Formation flight during aerial gunnery.

(2) Introduce

- (a) Multi-aircraft operations.
- (b) Sectors of fire.
- (c) Firing on pre-briefed targets while aircraft is maneuvering to include running, diving, and hover fires.

(3) Review

- (a) Preparation of weapons and aircraft.
- (b) Aerial gunnery procedures.

Performance Standards. Demonstrate ability to properly employ the .50 cal weapon during day aerial gunnery within a section of aircraft.

Prerequisite. AG-281.

Ordinance. 500 rounds .50 cal.

External Syllabus Support. Appropriate aerial gunnery range.

AG-283

1.5

C,R,O 2 CH-46E A

C,R

Goal. Introduce aerial gunnery against a moving target.

Requirement

(1) Discuss

- (a) CRM.

- (b) ICS procedures.
- (c) Safety.
- (d) Weapons conditions.
- (e) Weapons commands.
- (f) Weapons malfunctions/emergencies.
- (g) Crew served weapons checklist.
- (h) Aiming techniques.
- (i) Muzzle awareness.
- (j) Weapons preparation/nomenclature.
- (k) Mil sight values/range estimation.
- (l) Lead techniques.

(2) Introduce

- (a) Preparation of weapons and aircraft.
- (b) Aerial gunnery against a moving target.
- (c) Firing on pre-briefed targets.
- (d) Lead techniques at a moving target.

(3) Review. MAWTS-1 Aerial Gunner Manual and CH-46E Tactical Manual.

Performance Standards. Demonstrate the ability to employ the weapon at a moving target.

Prerequisite. AG-281.

Ordnance. 500 rounds .50 cal.

External Syllabus Support. Appropriate aerial gunnery range.

8. Carrier Qualification (CQ)

a. Purpose. To qualify the crewmember in day, night unaided, and NVG FCLPs.

b. General

(1) Refer to appropriate LHA/LPH/LHD NATOPS Manual and NWP-42 for carrier operations.

(2) An ENSI is required for initial NVG FCLP flights.

(3) Night CQ Requirements

(a) Requirements for initial/Refresher/delinquent qualification are:

- five day FCLPs.
- five NVG FCLPs.
- five night unaided FCLPs.

(b) Aircrew previously night CQ and proficient per paragraph 3(a) shall complete the following to maintain proficiency:

- two day FCLPs.
- two NVG FCLPs. (Note: CQ-293 chains CQ-292 and CQ-291).
- two night unaided FCLPs. (Note: CQ-292 chains CQ-291).

(4) CQ-293 may be flown under any light level condition. CCUI/AGOUI must be NSQ for appropriate light level.

(5) Aircrew shall discuss CRM as applicable to each event.

c. Crew Requirement

(1) CQ-291 and 292 require CC or CC/CCUI.

(2) CQ-293 requires either CC/AO, ENSI/CCUI, or ENSI/AOUI.

d. Ground/Academic Training. Review appropriate LHA/LPH/LHD NATOPS Manual and NWP-42 for carrier operations.

e. Flight Training. (3 Flights, 3.0 Hours).

CQ-291                    1.0                    C,R,O 1 CH-46E A

Goal. Conduct day FCLPs.

Requirement

(1) Discuss

- (a) CRM.
- (b) Communications.
- (c) LSE signals.
- (d) Landing direction.
- (e) Water landings.
- (f) Salt encrustation.
- (g) Waveoff.
- (h) Crew comfort levels.
- (i) Lookout doctrine.

(2) Introduce. Day FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations.

(3) Review. Appropriate LHA/LPH/LHD NATOPS Manual and NWP-42 for carrier operations.

Performance Standards. Demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CAL-211.

Ordinance. None.

External Syllabus Support. Approved FCLP pad.

CQ-292

1.0 C,R,O 1 CH-46E A N

C,R

Goal. Conduct night unaided FCLPs.

Requirement

(1) Discuss

- (a) CRM.
- (b) Communications.
- (c) LSE signals.
- (d) NVG procedures/operations.
- (e) Aircraft lighting.
- (f) Shipboard lighting.
- (g) Waveoff.
- (h) Crew comfort levels.
- (i) Lookout Doctrine.

(2) Introduce. Night unaided FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations.

(3) Review. CQ-291.

Performance Standards. Demonstrate the ability/knowledge to perform unaided shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CAL-213 and CQ-291.

Ordinance. None.

External Syllabus Support. Approved FCLP pad.

CQ-293

1.0 C,R,O 1 CH-46E A NS

C,R

Goal. Introduce NVD FCLP patterns.

Requirement

(1) Discuss

- (a) CRM.
- (b) Communications.
- (c) LSE signals.
- (d) Aircraft lighting.
- (e) Waveoff.
- (f) Crew comfort levels.
- (g) Lookout doctrine.
- (h) NVD procedures/operations.

(2) Introduce. NVD FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Use LSE light signals if available.

Performance Standards. Demonstrate the ability/knowledge to perform NVD shipboard flight operations to include LSE hand and arm signals.

Prerequisite. NVD-251 and CQ-291.

Ordinance. None.

External Syllabus Support. Approved FCLP pad.

233. CORE SKILL ADVANCED PHASE

1. Carrier Qualification (CQ)

- a. Purpose. To train/refresh the CC/AGO in day and NVD CQs.
- b. General

(1) Refer to LHA/LPH/LHD NATOPS Manuals and NWP-42 for air capable ship operations.

(2) Night CQ Requirements

- (a) Requirements for initial/Refresher/delinquent qualification are:
  - five day CQs.
  - five NVD CQs.
  - five night unaided CQs.

(b) CC/AGOs previously night carrier qualified and proficient per para 2(a) above shall complete the following to maintain proficiency:

- two day CQs.
- two NVD CQs. (Note: CQ-301 chains CQ-300 and CQ-491)
- two night unaided CQs. (Note: CQ-491 chains CQ-300)

(3) CQ-301 shall be flown under HLL conditions for initial qualification. ENSI required for initial NVD flights. Currency and re-qualification flights may be flown under any light level condition.

(4) CC/AGO is CQ on completion of CQ-300, CQ-301 and CQ-491.

(5) CC/AGOs are authorized to carry passengers during daylight hours when proficient in CQ-300.

(6) CC/AGOs are authorized to carry passengers under all conditions when proficient in CQ-301 and CQ-491.

(7) CC/AGO shall discuss CRM as applicable to each event.

c. Crew Requirement

(1) CQ-300 requires CC or CC/CCUI.

(2) CQ-301 requires either CC/AO, ENSI/CCUI, or ENSI/AOUI.

d. Ground/Academic Training. None.

e. Flight Training. (2 Flights, 2.0 Hours).

<u>CQ-300</u>	<u>1.0</u>	<u>C,R,O 1 CH-46E A</u>	<u>C,R</u>
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Goal. Conduct day CQ.

Requirement

(1) Discuss

- (a) CRM.
- (b) Communications.
- (c) LSE signals.
- (d) Shipboard procedures.
- (e) Waveoff.
- (f) Crew comfort levels.
- (g) Lookout Doctrine.
- (h) Emergency procedures during shipboard operations.

(2) Introduce. Day carrier landing procedures.

(3) Review

- (a) Day FCLP patterns.
- (b) Approaches.
- (c) Landings.
- (d) Emergency procedures peculiar to shipboard operations.

Performance Standards. Demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CQ-291.

Ordnance. None.

External Syllabus Support. Air capable ship deck.

CQ-301

1.0 C,R,O 1 CH-46E A NS

C,R

Goal. Conduct NVD CQ.

Requirement

(1) Discuss

- (a) CRM.
- (b) Communications.
- (c) LSE signals.
- (d) NVD procedures/operations.
- (e) Aircraft lighting.
- (f) Shipboard lighting.
- (g) Waveoff.
- (h) Crew comfort levels.
- (i) Lookout doctrine.

(2) Introduce. NVD carrier landings.

(3) Review. NVD FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations.

Performance Standards. Demonstrate the ability/knowledge to perform NVD shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CQ-293 and CQ-300.

Ordnance. None.

External Syllabus Support. NVD capable ship deck.

2. Night Vision Devices (NVD), Low Light Level (LLL)

a. Purpose. To qualify the CC/AGOUI in NVD (LLL) flight operations.

b. General

- (1) An ENSI is required for this stage.

(2) Successful completion of NVD-314 constitutes NSQ. A qualification letter signed by the commanding officer stating the CC/AGOUUI is NSQ is required to carry troops under any ambient light level condition. The original shall be placed in the CC/AGOUUI's NATOPS jacket and APR with a corresponding logbook entry.

(3) Prerequisite

(a) Aircrew must be NSQ (HLL).

(b) All initial/Refresher flights require a ENSI.

(c) Aircrew shall fly all events in light levels less than .0022 lux.

c. Crew Requirement. CC/AO, ENSI/CCUI or ENSI/AOUI.

d. Ground/Academic Training

(1) Appropriate chapters of the MAWTS-1 NVD Manual.

(2) Read appropriate chapters of the NATOPS manual.

(3) Read appropriate paragraphs of the NWP 3-22.5-CH-46E.

e. Flight Training. (4 Flights, 6.0 Hours).

NVD-311                      1.5                      C,R,O 1 CH-46E A NS                      C,R

Goal. Introduce single aircraft NVD (LLL) CALs.

Requirement

(1) Discuss

(a) CRM.

(b) Crew comfort levels.

(c) NVD failures.

(d) Emergencies.

(e) Inadvertent IMC.

(f) Aircraft lighting.

(g) Distance estimation.

(h) Depth perception.

(i) Effects of LLL environment on NVDs.

(j) Waveoff/brownout procedures.

(2) Introduce. Confined area takeoffs and landings at various unlit CAL sites under LLL conditions.

(3) Review. NVD-251.

Performance Standards. Demonstrate the ability to conduct CALs under LLL conditions.

Prerequisite. NVD-257.

Ordinance. None.

External Syllabus Support. CAL site.

NVD-312

1.5

C,R 2 CH-46E A NS

C,R

Goal. Introduce NVD (LLL) section CALs.

Requirement

(1) Discuss

(a) CRM.

(b) Crew comfort levels.

(c) NVD navigation techniques.

(d) NVD failures.

(e) Emergencies.

(f) Inadvertent IMC.

(g) Aircraft lighting.

(h) Depth perception.

(i) Distance estimation.

(j) Wingman position.

(k) Waveoff/brownout procedures.

(2) Introduce. LLL section CALS.

(3) Review. Section takeoffs and landings at various unlit CAL sites.

Performance Standards. Demonstrate the ability to conduct section CALs under LLL conditions.

Prerequisite. NVD-311.

Ordinance. None.

External Syllabus Support. CAL site.

NVD-313

1.5

C,R,O 3 OR MORE ACFT A NS

C,R

Goal. Conduct NVD (LLL) formation and division CALs.

Requirement

(1) Discuss

- (a) CRM during NVD (LLL) formation.
- (b) Crew comfort level during NVD (LLL) formation operations.
- (c) External aircraft lighting considerations during NVD (LLL) formation operations.

(2) Introduce

- (a) NVD (LLL) formation.
- (b) NVD (LLL) division CALs.

(3) Review. NVD-254.

Performance Standards. Demonstrate the ability to conduct division formation flight and CALs under LLL conditions.

Prerequisite. NVD-312.

Ordinance. None.

External Syllabus Support. CAL sites.

NVD-314

1.5

C,R,O 2 CH-46E A NS

C,R

Goal. Conduct NVD (LLL) TERF formation, navigation and section CALs. This flight is the NVD (LLL) evaluation/review for certification as NSQ.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) Obstacle clearance.
- (d) Lookout doctrine.
- (e) NVD navigation techniques.
- (f) Emergencies during low level operations.
- (g) Depth perception
- (h) Distance estimation.
- (i) Waveoff/brownout procedures.

(2) Introduce. LLL TERF/NAV.

(3) Review

(a) Map preparation, orientation, and NVD navigation techniques.

(b) Navigation along a predetermined route of at least five checkpoints remaining oriented along the route.

(c) Aircraft operations in an LLL environment.

Performance Standards. Demonstrate the ability to conduct NVD section TERF, NAV, CALs and formation flight in a LLL environment.

Prerequisite. NVD-313.

Ordinance. None.

External Syllabus Support. CAL site and approved NVD navigation route.

3. Air-to-Ground (AG)

a. Purpose. To qualify the CCUI/AOUI with NVD crew served weapon AG procedures.

b. General

(1) Aerial gunnery qualification lectures and initial instructional flights in this stage shall be conducted by a designated EWTI or NSI/AGI.

(2) Successful completion of AG-322 constitutes Aerial Gunnery Qualified (AGQ). A qualification letter signed by the commanding officer stating the CC/AGOUI is AGQ is required. The original shall be placed in the CC/AGOUI's NATOPS jacket and APR with a corresponding logbook entry.

(3) The AGOUI or CCUI must be NSQ for the appropriate light level being flown before flying any NVG aerial gunnery flights.

(4) Laser aiming devices are required for AG-321 and AG-322. If a Laser authorized range is not available, it shall be annotated at the bottom of the ATF.

c. Crew Requirement. CC/AG, ENSI-AGI/CCUI or ENSI-AGI/AGOUI.

d. Ground/Academic Training. Prior to conducting this stage of training, the Laser Safety class from the MAWTS-1 ASP shall be taught.

e. Prerequisite. AG-281, AG-282 and AG-283.

f. Simulator/Flight Training. (1 event, 1.5 Hours, 2 Flights, 3.0 Hours).

SAG-320            1.5    C S

Goal. Introduce the CCUI/AGUI to NVD aerial gunnery procedures.

Requirement

(1) Discuss

- (a) CRM.
- (b) ICS procedures.
- (c) Safety.
- (d) Weapons conditions.
- (e) Weapons commands.
- (f) Weapons malfunctions/stoppages/emergencies.
- (g) Crew served weapons checklist application.
- (h) Muzzle awareness.
- (i) Weapons preparation/nomenclature.
- (j) Effects while on NVDs.
- (k) Laser aiming devices/procedures.

(2) Introduce. NVD aerial gunnery while firing on pre-briefed targets.

(3) Review. MAWTS-1 Aerial Gunnery Manual and CH-46E Tactical Manuals.

Performance Standards. Demonstrate the ability to conduct NVD aerial gunnery.

Prerequisite. AG-281, 282, and 283.

Ordinance. None.

External Syllabus Support. Crew served weapons trainer.

AG-321

1.5

C 1 CH-46E A NS

C

Goal. Introduce NVD AG gunnery.

Requirement

(1) Discuss

- (a) CRM.
- (b) ICS procedures.
- (c) Safety.
- (d) Weapons conditions.
- (e) Weapons commands.
- (f) Weapons malfunctions/stoppages/emergencies.

- (g) Crew served weapons checklist application.
  - (h) Muzzle awareness.
  - (i) Weapons preparation/nomenclature.
  - (j) Effects while on NVDs.
  - (k) Laser aiming devices/procedures.
- (2) Introduce
- (a) NVD weapons employment techniques.
  - (b) Firing on pre-briefed targets while wearing NVDs.
- (3) Review. All previous aerial gunnery work.

Performance Standards. Demonstrate knowledge of the cycle of operation, nomenclature, employment of the XM-218 .50 cal machine gun. Demonstrate the ability to fire at pre-briefed targets while utilizing NVDs.

Prerequisite. SAG-320.

Ordinance. 500 rounds .50 cal, laser aiming device.

External Syllabus Support. Laser authorized aerial gunnery range.

AG-322

1.5

C,R,O 2 CH-46E A NS

C,R

Goal. Demonstrate proficiency with NVD weapons employment in a multi-aircraft flight. This is the aerial gunner evaluation/review flight.

Requirement

- (1) Evaluate/Review
- (a) ICS procedures.
  - (b) Safety.
  - (c) Weapons conditions.
  - (d) Weapons commands.
  - (e) Weapons malfunctions/stoppages/emergencies.
  - (f) Crew served weapons checklist application.
  - (g) Muzzle awareness.
  - (h) Weapons preparation/nomenclature.
  - (i) Effects while on NVDs.
  - (j) Laser aiming devices/procedures.

(2) Introduce. Firing on pre-briefed targets while aircraft is maneuvering; i.e., running, diving, and hover fires (while wearing NVDs).

(3) Review. AG-321.

Performance Standards. Demonstrate knowledge of ballistics, the cycle of operation, nomenclature and employment of the XM-218 .50 cal machine gun. Demonstrate the ability to fire at pre-briefed targets while utilizing NVDs.

Prerequisite. AG-321.

Ordinance. 500 rounds .50 cal, laser aiming device.

External Syllabus Support. Laser authorized AG range.

#### 4. Electronic Warfare (EW)

a. Purpose. To introduce and develop proficiency in the use of Aircraft Survivability Equipment (ASE) and EW principles.

##### b. General

(1) Refer to NWP 3-22.5-CH-46E and the NATOPS Manual for EW equipment operating procedures.

(2) At the completion of this stage aircrew will become familiar with operating procedures of onboard ASE and aircraft maneuvers associated with countering EW threats.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

##### d. Ground/Academic Training

(1) CH-46 Crew Member Electronic Warfare Course as listed in the MAWTS-1 Course Catalog.

(2) Demonstrate familiarity with NWP 3-22.5-CH-46E, CH-46 Tactical Manual, VOL I, VOL II, and MCM 3-1.

(3) Review APR-39, ALE-39, AAR-47, and ALQ-157 operating procedures.

e. Flight Training. (1 Flight, 1.5 Hours).

<u>EW-331</u>	<u>1.5</u>	<u>C,R 1 CH-46E A</u>	<u>C,R</u>
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Goal. Introduce basic operations and self-test procedures for ASE.

##### Requirement

(1) Discuss

- (a) Crew coordination.
- (b) Crew comfort level.
- (c) Communication procedures.

- (d) Lookout doctrine.
- (e) Threat awareness/threat calls.
- (f) Ground and airborne programming of ALE-39 and ALQ-157.
- (g) Operation of AAR-47.
- (h) Ground threats.
- (i) Tactical employment of expendables.
- (2) Introduce. ASE against a ground threat.
- (3) Review. None.

Performance Standards. Demonstrate basic knowledge of ASE.

Prerequisite. None.

Ordnance. 40 chaff, 20 flares.

External Syllabus Support. EW range, EW emitter, smoke grenades or pyrotechnics.

#### 5. Defensive Measures (DM)

a. Purpose. To develop proficiency in tactics and aerial DM used to evade enemy ground threats.

##### b. General

(1) Aircrews shall conduct these flights against a threat emitter (HAWK, SA-6, ZSU 23-4, etc.) and shall use ground based threat simulation (smoky SAMs, hand-held pyrotechnics, etc.).

(2) Aircrews shall not conduct DM training unless the following requirements are met:

(a) A EDM I is required for all initial instructional flights.

(b) The EDM I shall not have aircrew lookout responsibilities during DM training.

(c) The flight is specifically briefed to include DM training rules per the MAWTS-1 CH-46 DM Guide.

##### (3) Prerequisite

(a) TERF Qualified.

(b) FORM-231 and EW-331.

c. Crew Requirement. CC/AO, EDM I/CCUI/AO, EDM I/CC/AOUI, EDM I/CCUI/CCUI, EDM I/AOUI/AOUI.

##### d. Ground/Academic Training

(1) Review applicable chapters of the NWP 3-22.5-CH-46E for ASE and formation maneuvering.

(2) Review appropriate chapters in NATOPS.

(3) Complete the DM academic classes listed in the MAWTS-1 Crew Member ASP prior to DM-341.

(4) Complete Introduction to Helicopter Defensive Measures for Enlisted Aircrews, Aircraft Survivability Equipment, and AN/ALE-39 Systems Brief for Enlisted Aircrews in the MAWTS-1 ASP prior to the first DM flight.

(5) Read appropriate chapters in NWP 3-22.5-CH-46E Volume I.

e. Flight Training. (1 Flight, 1.5 Hours).

DM-341

1.5

C,R,O 2 CH-46E A

C,R

Goal. Introduce multi-aircraft DM against a ground threat.

Requirement

(1) Discuss

(a) CRM/intra/interflight coordination.

(b) Crew comfort level.

(c) Lookout doctrine.

(d) SA.

(e) Use of ALE-39, APR-39, ALQ-157, and AAR-47.

(f) Tactical formation maneuvering.

(g) Use of radar horizons, radar masking, maneuver and chaff to defeat threat radar systems.

(h) Use of terrain masking, maneuver, IR jammers, and flares to defeat threat IR missiles.

(2) Introduce

(a) Section/division DM against surface-to-air missile and radar threat systems on an EW range.

(b) Threat avoidance maneuvers and/or tactics to counter threat systems.

(c) Appropriate evasive maneuvers when engaged by a ground based threat.

Performance Standards. Demonstrate knowledge of the ASE and tactical maneuvers against ground based weapons systems.

Prerequisite. EW-331.

Ordnance. 40 chaff, 20 flares, 2 smoke grenades or pyrotechnics.

External Syllabus Support. EW range and emitter.

6. Mountain Area Training (MAT)

- a. Purpose. To develop proficiency in mountainous terrain operations.
- b. General. At the completion of this stage of training aircrew will be familiar with operating procedures of MAT operations.
- c. Crew Requirement. CC or CC/CCUI.
- d. Academic Training. Refer to appropriate chapters in the NATOPS Manual for discussion on mountain landing zone characteristics.
- e. Flight Training. (1 Flight, 1.5 Hours).

MAT-351            1.5                    C,R,O 1 CH-46E A

Goal. Conduct mountainous terrain operations.

Requirement

(1) Discuss

- (a) CRM.
- (b) Standard terminology.
- (c) Crew comfort levels.
- (d) Landing site evaluation/terrain suitability.
- (e) Effects of high altitude on aircraft performance.
- (f) Emergency procedures.
- (g) Aircraft clearances.
- (h) Main mount/pinnacle landing procedures.

(2) Introduce

- (a) Effects of wind in mountainous terrain.
- (b) Landing on pinnacles.
- (c) Landing on slopes.
- (d) Landing in valleys and canyons.
- (e) Crosswind, upslope, and downslope landings with respect to tail clearance.

Performance Standards. Demonstrate ability and knowledge of landing in mountainous terrain.

Prerequisite. CAL-211.

Ordnance. None.

External Syllabus Support. Range that supports MAT.

7. Helicopter Insertion/Extraction (HIE)

a. Purpose. To develop proficiency in HIE procedures.

b. General

(1) Pilot, copilot, crew chief, HRST Master and HRST Safety Observer shall brief together prior to commencing fastrope, rappelling, SPIE, and helocast/soft duck.

(2) The Jump Master is responsible for the safe and proper rigging of the aircraft for conduct of paraops and cargo drops. The crew chief shall preflight aircraft rigging.

(3) ICS cranials/gunner's belts required for Jump Master/Cast Master.

(4) Aircrew must be NSQ for flights conducted on NVGs.

c. Crew Requirement

(1) HIE-361 requires CC or CC/CCUI.

(2) HIE-362 requires CC/AO, ENSI/CCUI or ENSI/AOUI.

d. Ground/Academic Training

(1) Review NWP 3-22.5-CH-46E and applicable Force Orders/SOPs.

(2) Applicable courses from the MAWTS-1 course catalog.

e. Flight Training. (2 Flights, 3.0 Hours).

HIE-361                    1.0                    C,R,O 1 CH-46E A

Goal. Conduct airborne insertion/extraction (fastrope and rappel) procedures.

Requirement

(1) Discuss

(a) HIGE/HOGE requirements.

(b) CRM (pilots, crew chief, HRST master, and safety observer brief together).

(c) ICS procedures and standard terminology.

(d) ICS failure/hand and arm signals.

(e) Current Force Order/Wing SOP.

(f) Obstacle clearance and waveoff.

(g) Emergency procedures.

(h) Lookout doctrine.

(i) Weapons employment.

(2) Introduce

- (a) Preflight of the fastrope/rappelling equipment and rigging.
- (b) Assisting the pilot in maintaining an extended hover.
- (c) Troop insertion via fastrope/rappelling.
- (d) Hand and arm signals.

(3) Review. Fastrope and rappel procedures.

Performance Standards. Demonstrate knowledge and ability to conduct day fastrope/rappelling.

Prerequisite. CAL-211 and EXT-221.

Ordinance. None.

External Syllabus Support. Applicable HIE support equipment.

HIE-362

1.0

C,R,O 1 CH-46E A NS

C,R

Goal. Introduce NVD fastrope and rappel procedures.

Requirement

(1) Discuss

- (a) CRM during NVD HIE operations.
- (b) NVG considerations during NVD HIE operations.
- (c) Emergency procedures during NVD HIE operations.

(2) Introduce. NVD fastrope and rappel procedures.

(3) Review

- (a) Preflight of associated equipment and rigging.
- (b) Skills involved for holding an extended hover.
- (c) Troop insertion/extraction techniques.

Performance Standards. Demonstrate knowledge and ability to conduct NVD fastrope/rappelling.

Prerequisite. HIE-361.

Ordinance. None.

External Syllabus Support. Applicable HIE support equipment.

8. Tactics (TAC) Low and Medium Threat

a. Purpose. To introduce and develop proficiency in the execution of assault support operations in the following mission areas in a low and medium threat environment. Use MCCRES Volume III, Section A, Standards:

- (1) Helicopter Assault Operation [MPS 3A.4].
- (2) Noncombatant Evacuation Operation (NEO) [MPS 3A.7].
- (3) Raid [MPS 3A.8].
- (4) Security/Reinforcement [MPS 3A.9].
- (5) Reconnaissance Patrol/Reaction Force Operation [3A.10].
- (6) Medical Evacuation [MPS 3A.1].
- (7) Tactical Recovery of Aircraft, Equipment, and Personnel (TRAP) [MPS 3A.12].

b. General

- (1) CCUI shall attend the mission brief.
- (2) Every attempt should be made to expend the required .50 cal rounds. However, this should not restrict the completion of the event. Squadron ordnance shall mount .50 caliber machine guns for all tactical flights.
- (3) CCUI/AGOUI shall be AG qualified prior to beginning this stage.
- (4) CCUI/AGOUI shall be NSQ for the light level being flown.
- (5) Aircrews shall discuss CRM as applicable to each event.

c. Crew Requirement. CC/AO, CC/CCUI, or CC/AOUI.

d. Ground/Academic Training. Basic Principles of Escort Operations and Tactical Recovery of Aircraft and Personnel (TRAP) as listed in the MAWTS-1 ASP shall be taught by an EWTI prior to starting this stage.

e. Flight Training. (4 Flights, 6.0 Hours).

<u>TAC-371</u>	<u>1.5</u>	<u>C,R,O 2 OR MORE ACFT A</u>	<u>C,R</u>
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Goal. Conduct an assault support mission in a low threat scenario using MCCRES standards as a reference for mission planning.

Requirement

(1) Discuss

- (a) Cabin preparations.
- (b) Passenger brief and safety regulations.
- (c) Ramp and hatch operation.
- (d) Loading/unloading of passengers and/or internal/external cargo.
- (e) Gear storage.
- (f) Helicopter Emergency Egress Lighting System (HEELS).

(g) Helicopter Emergency Flotation System (HEFS), exit blocking when deployed.

(h) CRM.

(i) ICS procedures.

(j) Lookout doctrine.

(k) Penetration checklist.

(2) Introduce

(a) Aircrew responsibilities during tactical insert/extract of troops and/or cargo.

(b) Tactical formations and approaches as contained in NWP 3-22.5-CH-46E.

(3) Review. A1-H46AE-CLG-000 Cargo Loading Manual.

Performance Standards. Demonstrate the ability to perform crew responsibilities in a day low threat environment.

Prerequisite. CAL-212, TERF qualified, and AG qualified.

Ordinance. 500 rounds .50 cal.

External Syllabus Support. Authorized TERF area, CAL site, (live fire range preferred).

TAC-372

1.5

C,R,O 2 OR MORE ACFT A NS

C,R

Goal. Conduct an NVG assault support mission in a low threat environment using MCCRES standards as a reference for mission planning.

Requirement

(1) Discuss

(a) Use of onboard ASE during the mission.

(b) CRM during the ingress, objective area, and egress phases of the mission.

(c) Rules of engagement as applicable to the mission.

(d) Tactics used in a low threat environment.

(2) Introduce. Aircrew responsibilities during NVG tactical insert/extract of troops and/or cargo.

(3) Review. EW-331.

Performance Standards. Demonstrate ability to perform crew responsibilities during NVG operations in a low threat environment.

Prerequisite. TAC-371.

Ordnance. 500 rounds .50 cal.

External Syllabus Support. Authorized TERF area, CAL site (live fire range preferred).

TAC-374

1.5 C,R,O 2 OR MORE ACFT A C,R

Goal. Conduct an assault support mission in a medium threat environment emphasizing MCCRES standards.

Requirement

(1) Discuss

- (a) CRM during an assault support mission.
- (b) Crew comfort level.
- (c) Flight counter-tactics for air and ground threats.
- (d) ASE utilization.
- (e) Escort considerations.
- (f) Control and terminology for onboard defensive weapons.
- (g) NBC considerations.
- (h) TERF considerations.
- (i) Aerial gunnery procedures.
- (j) EMCON procedures.

(2) Introduce. Multi-plane aerial gunnery in an objective area/LZ.

(3) Review. Navigation, timing, formation, defensive weaponry, communication discipline, authentication procedures, escort utilization, and weapons control procedures.

Performance Standards. Demonstrate the ability to perform crew responsibilities during day operations in a medium threat environment.

Prerequisite. TAC-371.

Ordnance. 500 rounds .50 cal.

External Syllabus Support. TERF area, CAL site, (live fire, EW range preferred).

TAC-375

1.5 C,R,O 2 OR MORE ACFT A NS C,R

Goal. Conduct an NVD assault support mission in a medium threat environment emphasizing MCCRES standards.

Requirement

(1) Discuss

- (a) CRM during an assault support mission.
- (b) Crew comfort level.
- (c) Flight counter-tactics for air and ground threats.
- (d) ASE utilization.
- (e) Escort considerations.
- (f) Control and terminology for onboard defensive weapons.
- (g) NBC considerations.
- (h) TERF considerations.
- (i) Aerial gunnery procedures.

(2) Introduce

- (a) Tactical assault support mission at night using NVDs.
- (b) Escort aircraft utilization if available.
- (c) Multi-aircraft NVD aerial gunnery in an objective area.

(3) Review. TAC-374. Emphasis should be on navigation, timing, formation, communication discipline, authentication procedures, escort utilization and weapons control procedures.

Performance Standards. Demonstrate the ability to perform crew responsibilities during NVD operations in a medium threat environment.

Prerequisite. TAC-372.

Ordinance. 500 rounds .50 cal.

External Syllabus Support. TERF area, CAL site (live fire, EW range preferred).

9. External Cargo Operations (EXT)

a. Purpose. To conduct NVD external cargo operations.

b. General. At the completion of this stage the CCUI/AGOU will be able to conduct NVG external operations. EXT-392 requires an ENSI for initial/refresher flight.

c. Crew Requirement. EXT-392 CC/AGO, ENSI/CCUI or ENSI/AGOU.

d. Ground/Academic Training

- (1) Read appropriate chapters of the NATOPS Manual.

(2) Read appropriate paragraphs of the NWP 3-22.5-CH-46E.

(3) Read appropriate paragraphs of MCRP 4-11.3E Volumes I and II, Basic Operations and Equipment and Single Point Rigging Procedures.

e. Flight Training. (1 Flights, 1.5 Hours).

EXT-392                    1.5                    C,R,O 1 CH-46E A NS                    C,R

Goal. Introduce and conduct NVD External operations.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) Lost communications.
- (d) Low altitude emergencies.
- (e) Cargo release procedures.
- (f) Cargo hook/pendant illumination.
- (g) Depth perception/rate of descent.
- (h) HST procedures.
- (i) NVD procedures/emergencies.
- (j) Waveoff.

(2) Introduce. NVD external operations.

(3) Review. Drift corrections, common terminology, ground relationship, lookout procedures during takeoffs, precision approaches, and deliveries with external cargo while wearing NVDs.

Performance Standards. Demonstrate the ability and knowledge to conduct NVD external operation.

Prerequisite

- (1) EXT-221 and NVD-251.
- (2) ENSI required if CCUI is not NSQ for appropriate light level.

Ordinance. None.

External Syllabus Support. Single point load (1,000-4,000 pounds preferred), HST, authorized TERF route.

234. CORE PLUS PHASE

1. Tactics (TAC) (High Threat Environment)

a. Purpose. To develop proficiency in tactical execution of assault support operations in the following mission areas in a high threat environment. Use MCCRES Volume III, Section A, Standards:

- (1) Helicopter Assault Operation [MPS 3A.4].
- (2) Noncombatant Evacuation Operation (NEO) [MPS 3A.7].
- (3) Raid [MPS 3A.8].
- (4) Security/Reinforcement [MPS 3A.9].
- (5) Reconnaissance Patrol/Reaction Force Operation [3A.10].
- (6) Medical Evacuation {MPS 3A.1}.
- (7) Tactical Recovery of Aircraft, Equipment, and Personnel (TRAP) [MPS 3A.12].

b. General

- (1) CCUI shall attend the mission brief.
- (2) Every attempt should be made to expend the required .50 cal rounds. However, this should not restrict the completion of the event. Squadron ordnance shall mount .50 caliber machine guns for all tactical flights.
- (3) CCUI/AGOUI shall be AG qualified prior to beginning this stage.
- (4) CCUI/AGOUI shall be NSQ for the light level being flown.
- (5) Aircrews shall discuss CRM as applicable to each event.

c. Crew Requirement. CC/AG, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. Appropriate lectures in the MAWTS-1 Crew Chief ASP.

e. Flight Training. (2 Flights, 3.0 Hours).

<u>TAC-401</u>	<u>1.5</u>	<u>C,R,O 2 OR MORE ACFT A</u>	<u>C,R</u>
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Goal. Conduct an assault support mission in a high threat environment using MCCRES standards. Incorporate AG and EW concepts and skills.

Requirement

- (1) Discuss
  - (a) CRM/crew comfort level.
  - (b) ASE operations and secure voice capability.
  - (c) NBC considerations.

(d) Aerial gunnery procedures.

(2) Introduce

(a) Secure voice and ASE equipment.

(b) Navigation, timing, formation, defensive weaponry, communication discipline, authentication procedures, escort utilization, and weapons control procedures.

(3) Review. TAC-374.

Performance Standards. Demonstrate knowledge and ability to perform crew responsibilities in a high threat environment.

Prerequisite. TAC-374 and DM-341.

Ordnance. 500 rounds .50 cal.

External Syllabus Support. As available: live fire (HE preferred), Laser capable, FW/RW Escort/CAS assets, EW Emitter, FW/RW Adversaries, Smokey SAMs.

TAC-402

1.5 C,R,O 2 OR MORE ACFT A NS C

Goal. Conduct an NVD assault support mission in a high threat environment using MCCRES standards.

(1) Discuss

(a) In addition to the TAC-401 discussion items, discuss NVD (LLL) operational considerations.

(b) Execute a NVD (LLL) mission similar to TAC-401. Mission will be flown at TERF altitudes.

(c) Emphasis on lookout doctrine, navigation, timing, formation, communication discipline, authentication procedures, escort utilization, and weapons control procedures.

(2) Introduce. NVD high threat tactics.

(3) Review. TAC-401.

Performance Standards. Demonstrate knowledge and ability to perform crew responsibilities during NVD operations in a high threat environment.

Prerequisite. TAC-401 and TAC-375.

Ordnance. 500 rounds .50 cal.

External Syllabus Support. As available: live fire (HE preferred), Laser capable, FW/RW Escort/CAS assets, EW Emitter, FW/RW Adversaries and Smokey SAMs.

2. External Cargo Operations (EXT)

a. Purpose. To conduct TERF external cargo operations.

b. General. At the completion of this stage the CCUI/AGOUI will be able to conduct TERF external operations. EXT-420 requires an ETERFI for initial/refresher flight.

c. Crew Requirement. EXT-420 CC/AGO, ETERFI/CCUI or ETERFI/AGOUI.

d. Ground/Academic Training: Utilize academic courseware as outlined in the MAWTS-1 Course Catalog

e. Flight Training. (1 Flights, 1.5 Hours).

EXT-420                      1.5                      C,R,O 1 CH-46E A                      C,R

Goal. Introduce and conduct external operations in the TERF environment.

Requirement

(1) Discuss

- (a) CRM.
- (b) External cargo hook operations/preparation.
- (c) Communication procedures.
- (d) Cargo jettison procedures.
- (e) Emergencies with external cargo.
- (f) Waveoff procedures.
- (g) ICS procedures.
- (h) HST requirements.

(2) Introduce. External operations in a TERF environment.

(3) Review

- (a) TERF-242.
- (b) Cargo Loading Manual, A1-H46AE-CLG-000.

Performance Standards. Demonstrate the ability and knowledge to conduct external operation in a TERF environment.

Prerequisite. EXT-221 and TERF-242.

Ordinance. None.

External Syllabus Support. Load (1,000-4,000 pounds preferred), HST, authorized TERF route.

2. Nuclear, Biological, and Chemical (NBC)

a. Purpose. To develop proficiency with the AR-5 protective assembly during normal and tactical flight operations.

b. General

(1) For the safe execution of initial NBC flights, one pilot and one aircrewman shall remain unmasked. On subsequent flights, all aircrew may remain masked.

(2) Initial NBC-431 training flight will be flown in HLL conditions. Proficiency flights may be flown in LLL.

(3) Aircrew shall be NSQ (HLL).

(4) ENSI required for all initial NVD instructional flights.

(5) If flown during LLL conditions, aircrew shall be NSQ.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

d. Ground/Academic Training

(1) Discuss and review NBC information contained in NWP 3-22.5-CH-46E.

(2) Discuss AR-5 hookup and operating procedures in the aircraft.

(3) Egress drills with full NBC protective equipment simulating both overland and overwater emergencies shall be completed prior to NBC instructional flights.

e. Flight Training. (2 Flights, 2.0 Hours).

NBC-430                      1.0                      C,R 1 CH-46E A    C,R

Goal. Conduct normal flight operations in a simulated NBC environment.

Requirement

(1) Discuss

(a) Aircrew protective ensemble.

(b) Nuclear effects to aircraft and aircrew.

(c) Chemical and Biological agents, their effects and aircrew protective measures.

(d) Decontamination considerations.

(e) CRM in a NBC environment, to include emergency procedures.

(f) Operation, capabilities and limitations of protective masks.

(g) Physiological limitations and fatigue factors imposed by NBC protective equipment.

(h) Heliborne operations in a NBC environment.

- (2) Introduce. (With AR-5 donned).
- (a) Start/taxi while masked.
  - (b) Takeoff/landing while masked.
  - (c) Straight & level flight while masked.
  - (d) Hovering while masked.
  - (e) CALs while masked.
- (3) Review. Donning, adjustments, and doffing of the AR-5.

Performance Standards. Demonstrate the ability to perform crew responsibilities in a NBC environment.

Prerequisite. CAL-211.

Ordinance. None.

External Syllabus Support. CAL site.

NBC-431

1.0 C,R 1 CH-46E A NS

C,R

Goal. Conduct NVD flight operations in a simulated NBC environment.

Requirement

- (1) Discuss
- (a) CRM.
  - (b) Limitations of mask pertaining to flight scan and visual acuity.
  - (c) Limitations and fatigue factors imposed by NBC protective equipment.
  - (d) Proper mask maintenance and factors which render the mask unserviceable.
  - (e) Limitations of NVDs caused by mask affecting scan and visual acuity.
  - (f) Limitations and fatigue factors imposed by NBC protective equipment and NVDs.
- (2) Introduce. (with AR-5 and NVDs donned).
- (a) Start/taxi while masked and wearing NVDs.
  - (b) Takeoff/landings while masked and wearing NVDs.
  - (c) Straight & level flight while masked and wearing NVDs.
  - (d) Hovering while masked and wearing NVDs.
  - (e) CALs while masked and wearing NVDs.

(3) Review. Proper use of the AR-5 protective mask (donning and removing on the ground and in the air).

Performance Standards. Demonstrate knowledge and ability to perform NVD NBC operations.

Prerequisite. NVD-257 and NBC-430.

Ordnance. None.

External Syllabus Support. CAL site.

### 3. Defensive Measures (DM)

a. Purpose. To develop proficiency in tactics and aerial DM used to evade enemy air threats.

#### b. General

(1) After completion of DM-341, DM-441 and DM-442, the CCUI/AGOUI is DMQ. A qualification letter signed by the commanding officer stating the CCUI/AGOUI is DMQ is required to be placed in the aircrew's APR and NATOPS jacket with appropriate logbook entry.

(2) Aircrews shall not conduct DM training unless the following requirements are met:

(a) A EDMI is required for all initial/refresher flights.

(b) The EDMI shall not have lookout responsibilities during DM training.

(c) The flight lead briefs any aggressor aircrew per T&R Program Manual, and covers training rules prior to each flight.

(3) For helicopter versus helicopter DM, the aggressor aircraft shall be a non-assault helicopter.

(4) .50 caliber machine guns shall be mounted for all DM flights.

c. Crew Requirement. CC/AO, EDMI/CCUI/AO, EDMI/CC/AOUI, EDMI/CCUI/CCUI or EDMI/AOUI/AOUI.

#### d. Ground/Academic Training

(1) Review applicable chapters of the NWP 3-22.5-CH-46E for EW, ASE, and formation maneuvering.

(2) Review appropriate chapters in the CH-46E NATOPS.

(3) Complete the DM academic classes listed in the MAWTS-1 Crew Member ASP prior to DM-341.

(4) Discuss information in NWP 3-22.5-CH-46E, Vol. II pertaining to CH-46 energy and maneuverability versus a specific aircraft.

e. Flight Training. (2 Flights, 3.0 Hours).

DM-441            1.5            C,R,O 2 CH-46E VS 1 RW AGGRESSOR A            C,R

Goal. Introduce DM against a RW aggressor.

Requirement

(1) Discuss

- (a) CRM/Inter-flight coordination.
- (b) Crew comfort level.
- (c) Lookout doctrine.
- (d) Common terminology.
- (e) SA.
- (f) DM training rules.
- (g) Closure rate, radius of turn, and energy state.
- (h) Use and operation of ALE-39, APR-39, ALQ-157, and AAR-47.
- (i) Use of .50 cal machine gun.
- (j) DM against RW aggressor.
- (k) Mil sight values.
- (l) Wingman position SA.
- (m) Terrain avoidance.

(2) Introduce. Helicopter versus helicopter DM with an aggressor helicopter per the MAWTS-1 CH-46 DM Guide.

(3) Review. Helicopter performance characteristics and NATOPS limitations.

Performance Standards. Demonstrate knowledge and ability to conduct helicopter versus helicopter defensive measures.

Prerequisite. FORM-231 and DM-341.

Ordinance. None.

External Syllabus Support. Range (TACTS optional), RW adversary (RW platform capable of forward firing ordnance).

DM-442            1.5            C,R,O 2 CH-46E VS 1 F/W AGGRESSOR A            C,R

Goal. Introduce DM against a FW aggressor.

Requirement

(1) Discuss

- (a) CRM/Intra-flight coordination.
- (b) Crew comfort level.
- (c) Lookout doctrine.
- (d) Common terminology.
- (e) SA.
- (f) Closure rate, radius of turn, and energy state.
- (g) FW weapons parameters and considerations.
- (h) DM training rules.
- (i) Use of .50 cal machine gun.
- (j) DM against FW aggressor.
- (k) Wingman position SA.
- (l) Terrain avoidance.

(2) Introduce. Helicopter versus FW DM per the MAWTS-1 CH-46 DM Guide.

(3) Review. DM-341.

Performance Standards. Demonstrate knowledge of ASE, DM, and use of the .50 cal against threat systems. Aircrew shall also demonstrate the ability to conduct DM utilizing the timely attack warning.

Prerequisite. FORM-231 and DM-341.

Ordinance. None.

External Syllabus Support. Range (TACTS optional), FW adversary.

4. Mountain Area Training (MAT)

a. Purpose. To develop proficiency in mountainous terrain operations.

b. General. Initial MAT-451 will be conducted in HLL conditions. Proficiency flights may be conducted under LLL.

c. Crew Requirement

(1) MAT-450 requires CC or CC/CCUI.

(2) MAT-451 requires CC/AO, CC/CCUI or CCAOUI.

d. Academic Training. Refer to appropriate chapters in the NATOPS Manual for discussion of mountain landing zone characteristics.

e. Flight Training. (2 Flights, 3.0 Hours).

MAT-450

1.5 C,R,O 2 CH-46E A

Goal. Introduce section aircraft operations in mountainous terrain.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) Communication/standard terminology.
- (d) Multi-aircraft operations.
- (e) Lookout doctrine.
- (f) Landing site evaluation/terrain suitability.
- (g) Effects of high altitude on aircraft performance.
- (h) Emergency procedures.

(2) Introduce

- (a) Section operations in mountainous terrain.
- (b) Section CALs in mountainous terrain.

(3) Review. CAL-212 and MAT-351.

Performance Standards. Demonstrate the ability to conduct section landings in mountainous terrain.

Prerequisite. CAL-212 and MAT-351.

Ordinance. None.

External Syllabus Support. Range that supports MAT.

MAT-451

1.5 C,R,O 1 CH-46E A NS C,R

Goal. Introduce NVD mountainous area operations.

Requirement

(1) Discuss

- (a) CRM.
- (b) Crew comfort levels.
- (c) Communication/common terminology.
- (d) Landing site evaluation/terrain suitability.

(e) Emergencies (aircraft and NVDs).

(f) NVD failures.

(g) NVD navigation techniques.

(2) Introduce

(a) NVD mountainous terrain operations.

(b) NVD CALs in mountainous areas.

(3) Review. NVD-251.

Performance Standards. Demonstrate ability to conduct NVD MAT.

Prerequisite. NVD-251 and MAT-351.

Ordinance. None.

External Syllabus Support. Range that supports MAT.

5. Helicopter Insertion/Extraction (HIE)

a. Purpose. To develop proficiency in HIE procedures.

b. General

(1) Pilot, copilot, crew chief, HRST Master, and HRST Safety Observer shall brief together prior to commencing fastrope, rappelling, and SPIE.

(2) The Jump Master is responsible for the safe and proper rigging of the aircraft for conduct of paraops and cargo drops. The crew chief shall preflight aircraft rigging.

(3) ICS cranials and gunner's belts are required for all HIE events.

(4) CCUI/AGOUI shall be NSQ for the light level being flown.

(5) An ENSI is required for initial/refresher NVD flights.

c. Crew Requirement

(1) HIE-460, 462, and 463 require CC or CC/CCUI.

(2) HIE-461 requires CC/AO, ENSI/CCUI or ENSI/AOUI if flown on NVDs.

d. Ground/Academic Training

(1) Review NWP 3-22.5-CH-46E and applicable Force Orders/SOPs.

(2) Review NWP 19-1 series for rescue procedures and MCO 3130 series for Category B SAR Unit procedures.

(3) Applicable courses from the MAWTS-1 Course Catalog.

e. Flight Training. (4 Flights, 4.0 Hours).

HIE-460

1.0            C,R,O 1 CH-46E A

Goal. Introduce SPIE rig operations.

Requirement

(1) Discuss

- (a) HIGE/HOGE requirements.
- (b) CRM (pilots, crew chief, HRST Master, and HRST Safety Observer brief together).
- (c) ICS procedures and standard terminology.
- (d) ICS failure/hand and arm signals.
- (e) Current Force Order/Wing SOP.
- (f) Emergency procedures.
- (g) Obstacle clearance/waveoff.
- (h) Lookout doctrine.
- (i) SPIE from water.

(2) Introduce

- (a) Inspection of the SPIE rig.
- (b) Tactical troop insert/extract via SPIE.

(3) Review. SPIE rig procedures.

Performance Standards. Demonstrate ability and knowledge to conduct day SPIE operations.

Prerequisite. EXT-221.

Ordinance. None.

External Syllabus Support. Applicable HIE support equipment, HRST and Safety Observers.

HIE-461

1.0            C,R,O 1 CH-46E A (NS)

C,R

Goal. Introduce day or NVD aerial delivery procedures.

Requirement

(1) Discuss

- (a) CRM (pilot, copilot, crew chief, and Jump Master/Cast Master brief together).
- (b) Voice communication/standard terminology during aerial deliveries.

(c) Tactical considerations for aerial delivery of troops/cargo.

(d) Proper rigging and preflight of equipment to be inserted by aerial delivery.

1 Paraop procedures.

2 Sensor drop procedures.

3 ICS procedures.

(e) Emergency procedures.

(f) Movement within aircraft cabin.

(2) Introduce. Paraop or sensor drop operations.

(3) Review. Paraop or sensor drop procedures.

Performance Standards. Demonstrate the ability to conduct aerial delivery.

Prerequisite. None.

Ordinance. None.

External Syllabus Support. Certified DZ, Jumpmaster and Safety Observers.

HIE-462

1.0 C,R,O 1 CH-46E A

Goal. Introduce helocast/soft duck procedures.

Requirement

(1) Discuss

(a) CRM.

(b) Crew comfort levels.

(c) Waterfall effect.

(d) Salt encrustation.

(e) Ditching procedures.

(f) Helicopter Emergency Flotation System (HEFS).

(g) Ditching/water landing.

(2) Introduce

(a) Helocasting/soft duck procedures.

(b) Preflight of aircraft, troops and equipment for helo cast or soft duck.

(3) Review

(a) Overwater emergency procedures.

(b) Helocasting/soft duck progress.

Performance Standards. Demonstrate ability to conduct helocast/soft duck operations.

Prerequisite. None.

Ordinance. None.

External Syllabus Support. Castmaster and Safety Observers.

HIE-463

1.0 C,R,O 1 CH-46E A (N)(NS)

Goal. Introduce hoist and rescue procedures.

Requirement

(1) Discuss

(a) CRM.

(b) Crew comfort levels.

(c) Waterfall effect.

(d) Salt encrustation.

(e) Ditching procedures.

(f) HEFS.

(g) SAR equipment.

(h) Emergency procedures.

(i) Cable entanglements.

(2) Introduce

(a) Rescue procedures.

(b) Internal winch/external hoist rigging.

(c) Hoist procedures for hatch and "hell hole.?"

(d) Use of rescue strop, jungle penetrator, and stokes litter.

(e) Emergency procedures including use of Chicago grip, quick splice, and cable cutters.

(3) Review

(a) Overwater emergency procedures.

(b) SAR procedures and facilities.

Performance Standards. Demonstrate knowledge and ability to conduct hoisting operations.

Prerequisite. EXT-221.

Ordinance. None.

External Syllabus Support. Operational jungle penetrator or SAR basket (as available).

6. Aircraft Procedures Familiarization

a. Purpose. To familiarize the crew chief with cockpit emergency procedures, switches and CNCS operation.

b. General

(1) Refer to NATOPS for emergency procedures and CNCS operation.

(2) Pilots may sign off the initial crew chief ATF on this code only.

c. Crew Requirement. HAC/crew chief.

d. Ground/Academic Training. Review appropriate chapters of the NATOPS.

e. Simulator training. (1 event, 1.5 Hours).

SFAM-470      1.5      C,R,O      S

Goal. To better assist the pilots during aircraft emergency and multi-task situations.

Requirement

(1) Discuss

(a) CNCS operation and programming procedures.

(b) Pilot emergency procedures.

(c) Cockpit procedures.

(d) Aircraft systems procedures.

(e) Aircraft flight characteristics.

(2) Introduce

(a) Pilot emergency procedures.

(b) CNCS operation and procedures.

(3) Review. Pilot emergency procedures and ASE.

Performance Standards. The crew chief shall demonstrate the ability to assist pilots during emergency procedures, CNCS operation and ASE operation.

Prerequisite. None.

Ordnance. None.

External Syllabus Support. WST/AST.

7. Tail Gunnery (TG)

a. Purpose. To qualify the CCUI/AOUI with the M240 and Tail Gunnery procedures.

b. General

(1) Tail gunnery qualification lectures and initial instructional flights in this stage shall be conducted by a designated EWTI.

(2) Successful completion of TG-482 constitutes Tail Gunnery Qualified (TGQ). A qualification letter signed by the commanding officer stating the CC/AGOUI is TGQ is required. The original shall be placed in the CC/AGOUI's NATOPS jacket and APR with a corresponding logbook entry.

(3) The AGOUI or CCUI must be AGQ and NSQ for the appropriate light level being flown before flying any NVG tail gunnery flights.

(4) Laser aiming devices are required for TG-482. If a Laser authorized range is not available, it shall be annotated at the bottom of the ATF.

(5) Completion of the entire AG course cannot be waived or deferred.

c. Crew Requirement. CC/AG, EWTI/CCUI or EWTI/AGOUI.

d. Ground/Academic Training. Utilize the academic courseware as outlined in the MAWTS-1 Course Catalog..

e. Prerequisite. AG-281, AG-282, AG-283, AG-321, and AG-322 (AGQ).

f. Flight Training. (2 Flights, 3.0 Hours).

TG-481                      1.5                      C,R,O 1 CH-46E A                      C,R

Goal. Introduce tail gunnery utilizing the M240 7.62mm machine gun from the ramp to provide rear defensive fires.

Requirement

(1) Discuss

(a) CRM.

(b) ICS procedures.

(c) Safety.

(d) Weapons conditions.

(e) Weapons commands.

(f) Weapons malfunctions/stoppages/emergencies.

- (g) Crew served weapons checklist application.
- (h) Muzzle awareness.
- (i) Weapons preparation/nomenclature.
- (j) Emergency egress procedures.
- (k) Laser aiming devices/procedures.

(2) Introduce

- (a) Tail gunnery weapons employment techniques.
- (b) Firing on pre-briefed targets from the ramp.

(3) Review. All previous aerial gunnery work.

Performance Standards. Demonstrate knowledge of the cycle of operation, nomenclature, employment of the M240 7.62mm machine gun while fired from the ramp. Demonstrate the ability to engage pre-briefed targets.

Prerequisite. Completion of the entire AG syllabus.

Ordinance. 500 rounds 7.62 mm.

External Syllabus Support. Authorized aerial gunnery range.

TG-482

1.5

C,R,O 1 CH-46E A NS

C,R

Goal. Introduce NVG tail gunnery utilizing the M240 7.62mm machine gun from the ramp to provide rear defensive fires.

Requirement

(1) Discuss

- (a) CRM.
- (b) ICS procedures.
- (c) Safety.
- (d) Weapons conditions.
- (e) Weapons commands.
- (f) Weapons malfunctions/stoppages/emergencies.
- (g) Crew served weapons checklist application.
- (h) Muzzle awareness.
- (i) Weapons preparation/nomenclature.
- (j) Emergency egress procedures.
- (k) Laser aiming devices/procedures.
- (l) NVG operations and emergency procedures.

(2) Introduce

(a) NVG tail gunnery weapons employment techniques.

(b) Firing on pre-briefed targets from the ramp.

(3) Review. All previous aerial gunnery work.

Performance Standards. Demonstrate knowledge of the cycle of operation, nomenclature, employment of the M240 7.62mm machine gun while fired from the ramp. Demonstrate the ability to engage pre-briefed targets while utilizing NVGs.

Prerequisite. TG-481.

Ordinance. 500 rounds .7.62 mm.

External Syllabus Support. LASER authorized aerial gunnery range.

8. Carrier Qualification (CQ)

a. Purpose. To introduce/refresh the CC/AGO in unaided shipboard landings.

b. General

(1) Refer to LHA/LPH/LHD NATOPS Manuals and NWP-42 for air capable ship operations.

(2) Night CQ Requirements

(a) Requirements for initial/Refresher/delinquent qualification are:

- five day CQs.
- five NVD CQs.
- five night unaided CQs.

(b) CC/AGOs previously night CQ and proficient per paragraph (2)a above shall complete the following to maintain proficiency:

- two day CQs.
- two NVD CQs. (Note: CQ-301 chains CQ-300 and CQ-491).
- two night unaided CQs. (Note: CQ-491 chains CQ-300).

(3) CQ-301 shall be flown under HLL conditions for initial qualification. ENSI required for initial NVD flights. Currency and re-qualification flights may be flown under any light level condition.

(4) CC/AGO is CQ on completion of CQ-300, CQ-301 and CQ-491.

(5) CC/AGO is authorized to carry passengers during daylight hours when proficient in CQ-300.

(6) CC/AGO is authorized to carry passengers under all conditions when proficient in CQ-301 and CQ-491.

(7) CC/AGO shall discuss CRM as applicable to each event.

c. Crew requirements. CC, CC/CCUI.

d. Ground/Academic Training. Review appropriate chapters of NWP-42 and the LPH/LHA/LHD NATOPS Manual.

e. Flight Training. (1 Flight, 1.0 Hour).

CQ-491            1.0    C,R,O   1 CH-46E   A   N

Goal.    Conduct night unaided CQs.

Requirement

(1) Discuss

- (a) CRM during shipboard landings.
- (b) Communications used during shipboard landings.
- (c) LSE signals.
- (d) Water landings/ditching.
- (e) Aircraft lighting used during shipboard landings.
- (f) Rotor engagement/disengagement.
- (g) Launch/recovery wind envelopes.
- (h) LSE signals.

(2) Introduce.    Unaided CQ operations.

(3) Review.    CQ-292 and CQ-300.

Performance Standards.    Demonstrate ability to conduct unaided carrier landings.

Prerequisite.    CQ-292 and CQ-300.

Ordinance.    None.

External Syllabus Support.    CQ capable ship.

240. INSTRUCTOR TRAINING

1. Instructor Under Training (IUT)

a. Purpose.    To standardize procedures for qualifying syllabus instructors within the FRS (this event applies only to FREST instructor evaluations).

b. General

(1) The CC IUT must demonstrate proficiency in instructing all evolutions in this stage.

(2) Upon completion of this stage the CC IUT shall be designated a Crew Chief Instructor (CCI).

(3) The CC IUT shall have completed the requirements for designation as Night Systems FAM Instructor (NSFI) and TERFI per MAWTS-1 Course Catalog.

(4) Prerequisite.    TERF/NSQ.

- c. Crew Requirements. CCI/CCIUT.
- d. Ground/Academic Training. None.
- e. Flight Training. (1 Flight, 2.0 hours).

STAN-500            2.0            E 1 CH-46E A

Goal. Standardize instructional techniques during FAM/FORM/CAL/EXT sorties.

Requirement

(1) Demonstrate instructional techniques of crew chief responsibilities during FAM/FORM/EXT/CAL emphasizing lookout doctrine, crew coordination, ICS procedures, and obstacle clearance.

(2) Demonstrate ability to instruct in the use of checkpoints, barrier features, prominent terrain features, map interpretation, and crew coordination.

Performance Standards. The crew chief will conform to instructional techniques set forth by the FRS for all FAM maneuvers IAW the FRS Standardization Manual and NATOPS Manual.

Prerequisite. Appropriate FRS lessons.

Ordnance. None.

External Syllabus Support. None.

250. REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS

1. NATOPS Training/Evaluation.

- a. Purpose. To complete the annual NATOPS requirement.
- b. General

(1) This is an annual flight requirement as listed in OPNAVINST 3710.7 and A1-H46AE-NFM-000 (CH-46 NATOPS Manual).

(2) This flight code will not provide a CRP value and will be used primarily to assist in management and tracking annual NATOPS evaluations.

(3) The evaluating crew chief shall be a designated NATOPS Evaluator/Assistant NATOPS instructor.

- c. Crew Requirements. CC/CC or CC/AGO.
- d. Ground/Academic Training. None.
- e. Flight Training. (1 Flight, 1.5 Hours).

RQD-600            1.5            C,R,O E 1 CH-46E A (N)(NS)            C,R,E

Goal. CC/AGO annual NATOPS evaluation.

Requirement. Evaluate proficiency using all aspects of the CH-46E as a weapons system. The proficiency expected by the evaluator in this flight shall be commensurate with the experience of the CC or AGO being evaluated.

Discuss. All emergency procedures and Standardization Manual maneuvers.

Introduce. None.

Review. None.

Performance Standards. The performance expected by the evaluator in this flight shall be commensurate with the experience of the aircrew under evaluation.

Prerequisite. Completion of the open and closed book NATOPS examinations.

Ordnance. None.

External Syllabus Support. None.

#### 251. GRADUATE LEVEL COURSES

1. There are seven graduate level courses that qualify crew chief instructors for specific portions of the T&R syllabus. These courses are as follows:

- a. Enlisted Weapons and Tactics Instructor (EWTI Sec MOS 6177).
- b. Enlisted Terrain Flight Instructor (ETERFI).
- c. Enlisted Night Systems FAM Instructor (ENSFI).
- d. Enlisted Night Systems Instructor (ENSI).
- e. Enlisted Defensive Measures Instructor (EDMI).
- f. Aerial Gunner Instructor (AGI).
- g. Enlisted Night Systems SAR Instructor (ENSSI).

2. The above courses and applicable training codes are listed in the current MAWTS-1 Course Catalog. There will be no re-fly factors for these instructor flights. T&R syllabus currency in stages is considered sufficient to maintain currency as an instructor. EWTIs are only qualified at the Weapons and Tactics Instructor course conducted at MAWTS-1 during WTI.

252. SPECIAL TRAINING. This category is designed for aircrew to develop proficiency in flight procedures and techniques involving special training requirements. Due to the special equipment and logistical support, facilities or supporting units required to conduct special training flights, squadrons may complete these flights as appropriate support becomes available and mission requirements dictate.

#### 1. Arctic Weather Training (AWT)

a. Purpose. To teach the fundamentals of and/or develop proficiency in any aspect of flying in cold weather with snow on the ground.

b. General

(1) Ambient air temperatures will normally be 10 degrees or below Fahrenheit with snow on the ground. Aircrew must note that cold dry conditions with blowing snow will significantly increase the difficulty of arctic weather flight.

(2) Aircrew shall be NSQ for all NVG flights.

c. Crew Requirement. CC (AO if NVDs are used).

d. Ground/Academic Training

(1) Environmental factors.

(2) Arctic weather survival.

(3) Arctic weather physiology/psychology.

e. Flight Training. (1 Flight, 2.0 Hours).

AWT-620                    2.0                    1 CH-46E A (N)(NS)

Goal. Introduce helicopter operations in a cold weather environment.

Requirement.

(1) Discuss

(a) Cold dry conditions.

(b) Blowing snow.

(c) White-out conditions.

(d) Aircraft cold weather limitations.

(e) Aircraft anti-ice.

(f) Icing.

(2) Introduce. Snow landing techniques.

(3) Review. NATOPS.

Performance Standards. Demonstrate ability to conduct aircraft operations in a cold weather environment.

Prerequisite. CAL-211.

Ordinance. None.

External Syllabus Support. Snow on the ground.

2. Desert Operations (DES)

a. Purpose. To develop proficiency in aspects of flying in a dusty, high temperature, high density altitude, desert environment.

- b. Crew Requirement. CC (AO if NVDs are used).
- c. Ground/Academic Training
  - (1) Environmental factors (weather, desert conditions).
  - (2) Desert weather survival.
  - (3) Desert weather physiology/psychology.
  - (4) Desert weather clothing and equipment.
- d. Flight Training. (1 Flight, 2.0 Hours).

DES-630                    2.0                    1 CH-46E A (N)(NS)

Goal. Introduce helicopter operations in a desert environment.

Requirement

- (1) Discuss
  - (a) Blowing sand.
  - (b) Brownout conditions.
  - (c) Aircraft hot weather performance limitations.
- (2) Introduce. Desert landing techniques.
- (3) Review. NATOPS.

Performance Standards. Demonstrate ability to conduct aircraft operations in a desert environment.

Prerequisite. CAL-211.

Ordnance. None.

External Syllabus Support. Desert environment.

3. CRM Training

- a. Purpose. To conduct annual CRM Training.
- b. Crew Requirement. CC/(AO if NVDs are used).
- c. Flight Training. (1 Flight, 2.0 Hours).

CRM-640                    2.0                    C,R 1 CH-46E A                    C,R

Goal. Practice/review CRM principles presented in the CH-46E CRM Training Course while executing a simulated mission scenario.

Requirement

(1) Discuss

- (a) Decision making.
- (b) Assertiveness.
- (c) Mission analysis.
- (d) Communication.
- (e) Leadership.
- (f) Adaptability/flexibility.
- (g) SA.

(2) Evaluate

- (a) Decision making.
- (b) Assertiveness.
- (c) Mission analysis.
- (d) Communication.
- (e) Leadership.
- (f) Adaptability/flexibility.
- (g) SA.

(3) Emergencies. Perform as required to evaluate the above skills.

Prerequisite. Completion of the CH-46E CRM course.

Ordinance. None.

External Syllabus Support. None.

4. Water Landings (WTR)

- a. Purpose. To develop the skills necessary to perform water landings.
- b. General. Practice water landings shall be made in a fresh water environment.
- c. Crew Requirement. CC.
- d. Flight Training. (1 Flight, 1.0 Hour).

WTR-650            1.0            C,R 1 CH-46E A

Goal. Assist the pilot with executing a water landing.

Requirement

(1) Discuss

- (a) CRM requirements for water landings.
- (b) Water landing checklist.
- (c) Waterfall effect and salt encrustation.
- (d) Rescue with the side door down procedures and limitations.
- (e) Inadvertent HEFS deployment.
- (f) Ditching.

(2) Introduce

- (a) Water taxi.
- (b) Vertical water takeoff.
- (c) Vertical water landing.
- (d) Running water takeoff.
- (e) Running water landing.

(3) Review. Overwater rescue hoist operations.

Performance Standards. Demonstrate the ability to conduct water landings.

Prerequisite. CAL-211.

Ordnance. None.

External Syllabus Support. Authorized fresh water landing area.

260. ORDNANCE REQUIREMENTS. Requirements are based on a single aircrew basis per OPNAVNOTE 8010.

<u>ORDNANCE</u>	<u>100</u> <u>SERIES</u>	<u>200</u> <u>SERIES</u>	<u>300</u> <u>SERIES</u>	<u>400</u> <u>SERIES</u>	<u>REFRESHER</u>	<u>IUT</u>	<u>*ANNUAL</u>
.50 cal	0	1,500	3,000	1,000	3,500	2,000	3,500
7.62 mm	0	0	0	1,000	1,000	1,500	1,000

\* Annual Ordnance requirements maintain aircrew member proficiency.

T&R MANUAL, CH-46E

AIRCRAFT: CH-46E                      MOS: 6172                      CREW POSITION: CREW CHIEF

STAGE	FLT TRNG CODE	HRS	REFLY INTERVAL	CRP	C	R	O	E	REMARKS
<b>CORE SKILL INTRODUCTION</b>									
FAM	109	1.5	*	3.5	X			X	A
	110	1.5	*	3.5	X		X	X	A
	117	1.5	*	3.5	X			X	A N
	119	2.0	*	3.5	X			X	A NS
NAV	130	1.5	*	4.5	X			X	A (N)
	133	1.5	*	5.0	X			X	A NS
CAL	141	1.5	*	4.5	X			X	A
	142	1.5	*	5.0	X		X	X	A NS
FORM	151	1.5	*	4.5	X			X	2 A
	152	1.5	*	4.5	X		X	X	2 A
EXT	161	1.5	*	4.5	X		X	X	A
TERF	171	1.5	*	4.0	X		X	X	A
REW	181	1.5	*	4.5	X		X		A (N) (NS)
CSIX	182	2.0	*	5.0	X		X	X	A (N) (NS)
<b>CORE SKILL BASIC</b>									
FAM	201	1.5	6	0.5	X	X			A (N)
CAL	211	1.5	6	1.0	X				A
	212	1.5	6	0.5	X	X	X		2 A (N)
	213	1.5	12	0.5	X	X	X		A N
EXT	221	1.5	12	1.0	X	X	X		A
FORM	231	1.5	6	0.5	X	X			2 A
TERF	241	1.5	6	0.5					A
	242	1.5	6	0.5		X			A
	243	1.5	6	1.0	X	X	X		2 A
NVD	251	1.5	6	0.5	X	X	X		A NS
	252	1.5	6	0.5	X				2 A NS
	253	1.5	6	1.0	X	X	X		2 A NS
	254	1.5	6	1.0	X	X			3 A NS
	255	1.5	6	0.5					A NS
	256	1.5	6	0.5	X	X	X		2 A NS
	257	1.5	6	1.0	X	X	X		2 A NS
AG	280	1.5	*	0.0	X				S
	281	1.5	12	0.5	X				A
	282	1.5	12	1.0	X	X	X		2 A
	283	1.5	12	1.0	X	X	X		A
CQ	291	1.0	12	0.5	X	X	X		A
	292	1.0	12	0.5	X	X	X		A N
	293	1.0	12	0.5	X	X	X		A NS

Figure 2-1.--MOS 6172 Refly Interval, CRP.

T&R MANUAL, CH-46E

AIRCRAFT: CH-46E                      MOS: 6172                      CREW POSITION: CREW CHIEF

STAGE	FLT TRNG CODE	HRS	REFLY INTERVAL	CRP	C	R	O	E	REMARKS
<b>CORE SKILL ADVANCED</b>									
CQ	300	1.5	12	1.0	X	X	X		A
	301	1.0	12	1.0	X	X	X		A NS
NVD	311	1.5	6	1.0	X	X	X		A NS
	312	1.5	6	1.0	X	X			2 A NS
	313	1.5	6	1.0	X	X	X		3+ A NS
	314	1.5	6	1.0	X	X	X		2+ A NS
AG	320	1.5	*	0.0	X				S
	321	1.5	12	1.5	X				A NS
	322	1.5	12	1.5	X	X	X		2 A NS
EW	331	1.5	12	0.5	X	X			A
DM	341	1.5	12	1.0	X	X	X		2 A
MAT	351	1.5	12	1.0	X	X	X		A
HIE	361	1.0	12	1.0	X	X	X		A
	362	1.0	12	1.0	X	X	X		A NS
TAC	371	1.5	6	1.0	X	X	X		2+ A
	372	1.5	6	1.0	X	X	X		2+ A NS
	374	1.5	6	1.5	X	X	X		2+ A
	375	1.5	6	1.5	X	X	X		2+ A NS
EXT	392	1.5	12	1.5	X	X	X		A NS
<b>CORE PLUS</b>									
TAC	401	1.5	12	0.5	X	X	X		2+ A
	402	1.5	12	0.5	X	X	X		2+ A NS
EXT	420	1.5	12	0.3	X	X	X		A
NBC	430	1.0	12	0.2	X	X			A
	431	1.0	12	0.3	X	X			A NS
DM	441	1.5	12	0.3	X	X	X		A 2V1 R/W
	442	1.5	12	0.3	X	X	X		A 2V1 F/W
MAT	450	1.5	12	0.2	X	X	X		2 A
	451	1.5	12	0.2	X	X	X		A NS
HIE	460	1.0	12	0.3	X	X	X		A
	461	1.0	12	0.3	X	X	X		A (NS)
	462	1.0	12	0.3	X	X	X		A
	463	1.0	12	0.3	X	X	X		A (N) (NS)
SFAM	470	1.5	*	0.1	X	X	X		S
TG	481	1.5	12	0.3	X	X	X		A
	482	1.5	12	0.3	X	X	X		A NS
CQ	491	1.0	12	0.3	X	X	X		A N

Figure 2-1.--MOS 6172 Refly Interval, CRP--Continued.

T&R MANUAL, CH-46E

AIRCRAFT: CH-46E                      MOS: 6172                      CREW POSITION: CREW CHIEF

STAGE	FLT TRNG CODE	HRS	REFLY INTERVAL	CRP	C	R	O	E	REMARKS
<b>INSTRUCTOR TRAINING</b>									
STAN	500	2.0	*	0.0				X	A
<b>REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS</b>									
RQD	600	1.5	12	0.0	X	X	X	X	A (N) (NS)
<b>SPECIAL TRAINING</b>									
AWT	620	2.0	*	0.0					A (N) (NS)
DES	630	2.0	*	0.0					A (N) (NS)
CRM	640	2.0	12	0.0	X	X			A
WTR	650	1.0	*	0.0	X	X			

Figure 2-1.--MOS 6172 Refly Interval, CRP--Continued.

T&R MANUAL, CH-46E

AIRCRAFT: CH-46E		CREW POSITION: AERIAL GUNNER/OBSERVER						
STAGE	FLT TRNG CODE	HRS	REFLY INTERVAL	CRP	C	R	E	REMARKS
<b>CORE SKILL BASIC</b>								
FAM	201	1.5	6	0.5	X	X		A (N)
CAL	211	1.5	6	0.5	X			A
	212	1.5	6	0.5	X	X		2 A (N)
FORM	231	1.5	6	0.5	X	X		2 A
TERF	241	1.5	6	0.5				A
	242	1.5	6	0.5				A
	243	1.5	6	1.0	X	X		2 A
NVD	251	1.5	6	0.5	X	X		A NS
	252	1.5	6	0.5	X			2 A NS
	253	1.5	6	1.0	X	X		2 A NS
	254	1.5	6	1.0	X	X		3 A NS
	255	1.5	6	1.0				A NS
	256	1.5	6	1.0	X	X		2 A NS
	257	1.5	6	1.0	X	X		2 A NS
AG	280	1.5	*	0.0	X			S
	281	1.5	12	1.0	X			A
	282	1.5	12	1.5	X	X		2 A
	283	1.5	12	1.5	X	X		A
CQ	292	1.0	12	0.5	X	X		A N
	293	1.0	12	0.5	X	X		A NS
<b>CORE SKILL ADVANCED</b>								
CQ	300	1.0	12	1.0	X	X		A
	301	1.0	12	1.0	X	X		A NS
NVD	311	1.5	6	1.0	X	X		A NS
	312	1.5	6	1.0	X	X		2 A NS
	313	1.5	6	1.5	X	X		3+ A NS
	314	1.5	6	1.5	X	X		2+ A NS
AG	320	1.5	*	0.0	X			S
	321	1.5	12	1.5	X			A NS
	322	1.5	12	1.5	X	X		2 A NS
EW	331	1.5	12	1.0	X	X		A
DM	341	1.5	12	1.0	X	X		2 A
HIE	362	1.0	12	1.0	X	X		A NS
TAC	371	1.5	6	1.5	X	X		2+ A
	372	1.5	6	1.5	X	X		2+ A NS
	374	1.5	6	1.5	X	X		2+ A
	375	1.5	6	1.5	X	X		2+ A NS
EXT	392	1.5	12	1.0	X	X		A NS

Figure 2-2.--Aerial Gunner and Observer Refly Interval, CRP.

T&R MANUAL, CH-46E

AIRCRAFT: CH-46E

CREW POSITION: AERIAL GUNNER/OBSERVER

STAGE	FLT TRNG CODE	HRS	REFLY INTERVAL	CRP	C	R	E	REMARKS
<b>CORE PLUS</b>								
TAC	401	1.5	12	0.5	X	X		2+ A
	402	1.5	12	0.5	X			2+ A NS
EXT	420	1.5	12	0.4	X	X		A
NBC	430	1.0	12	0.3	X	X		A
	431	1.0	12	0.4	X	X		A NS
DM	441	1.5	12	0.5	X	X		A 2V1 R/W
	442	1.5	12	0.5	X	X		A 2V1 F/W
MAT	451	1.5	12	0.4	X	X		A NS
HIE	461	1.0	12	0.5	X	X		A (NS)
TG	481	1.5	12	0.5	X	X		A
	482	1.5	12	0.5	X	X		A NS
<b>REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS</b>								
RQD	600	1.5	12	0.0	X	X	X	A (N) (NS)
<b>SPECIAL TRAINING</b>								
AWT	620	2.0	*	0.0				A (N) (NS)
DES	630	2.0	*	0.0				A (N) (NS)
CRM	640	2.0	12	0.0	X	X		A

Figure 2-2.--Aerial Gunner and Observer Refly Interval, CRP--Continued.

## CREW CHIEF FLIGHT UPDATE CHAINING

<u>STAGE</u>	<u>FLIGHT</u>	<u>FLIGHTS UPDATED</u>
FAM	201	
CAL	211	201
	212	201,211
	213	201,211
EXT	221	211
FORM	231	
TERF	241	
	242	241
	243	231,241,242
NVG	251	211
	252	231
	253	211,212,231,251,252
	254	211,212,231,251,252,253
	255	241,242
	256	231,241,242,243,252,253,255
	257	231,241,242,243,252,253,255,256
AG	280	
	281	201,280
	282	201,280,281
	283	201,280,281
CQ	291	
	292	291
	293	291
CQ	300	291
	301	292,300
NVG	311	211,251
	312	211,212,251,252,253,311
	313	211,212,251,252,253,254,311,312
	314	254,255,256,257,311,312,313
AG	320	280
	321	281,320
	322	281,282,321
EW	331	
DM	341	241,242,243,331
MAT	351	211

Figure 2-3.--Crew Chief Flight Update Chaining.

CREW CHIEF FLIGHT UPDATE CHAINING

<u>STAGE</u>	<u>FLIGHT</u>	<u>FLIGHTS</u> <u>UPDATED</u>
HIE	361 362	
TAC	371 372 374 375	211, 212, 231, 241, 242, 243 211, 212, 231, 241, 242, 243, 251, 252, 253, 255, 256, 257, 371 211, 212, 231, 241, 242, 243, 371 211, 212, 231, 241, 242, 243, 251, 252, 253, 255, 256, 257, 311, 312, 314, 371, 372, 374
EXT	392	211, 221
TAC	401 402	211, 212, 231, 241, 242, 243, 371, 374 211, 212, 231, 241, 242, 243, 251, 252, 253, 255, 256, 257, 311, 312, 314, 371, 372, 374, 375, 401
EXT	420	221, 241, 242
NBC	430 431	211 213, 251
DM	441 442	231 231
MAT	450 451	211, 212, 351 211, 213, 251, 311
HIE	460 461 462 463	
SFAM	470	
TG	481 482	
CQ	491	293, 300

Figure 2-3.--Crew Chief Flight Update Chaining--Continued.

## AERIAL GUNNER/OBSERVER FLIGHT UPDATE CHAINING

<u>STAGE</u>	<u>FLIGHT</u>	<u>FLIGHTS UPDATED</u>
FAM	201	
CAL	211	201
	212	201, 211
FORM	231	
TERF	241	
	242	241
	243	231, 241, 242
NVG	251	211
	252	231
	253	211, 212, 231, 251, 252
	254	211, 212, 231, 251, 252, 253
	255	241, 242
	256	231, 241, 242, 243, 252, 253, 255
	257	231, 241, 242, 243, 252, 253, 255, 256
AG	280	
	281	201, 280
	282	201, 280, 281
	283	201, 281
CQ	292	
	293	
CQ	300	
	301	293, 300
NVG	311	211, 251
	312	211, 212, 251, 252, 253, 311
	313	211, 212, 251, 252, 253, 254, 311, 312
	314	254, 255, 256, 257, 311, 312, 313
AG	320	280
	321	281, 320
	322	281, 282, 321
EW	331	
DM	341	241, 242, 243, 331
HIE	362	
TAC	371	211, 212, 231, 241, 242, 243
	372	211, 212, 231, 241, 242, 243, 251, 252, 253, 255, 256, 257, 371
	374	211, 212, 231, 241, 242, 243, 371
	375	211, 212, 231, 241, 242, 243, 251, 252, 253, 255, 256, 257, 311, 312, 314, 371, 372, 374
EXT	392	211

Figure 2-4.--Aerial Gunner/Observer Flight Update Chaining.

## AERIAL GUNNER/OBSERVER FLIGHT UPDATE CHAINING

<u>STAGE</u>	<u>FLIGHT</u>	<u>FLIGHTS UPDATED</u>
TAC	401	211,212,231,241,242,243,371,374
	402	211,212,231,241,242,243,251,252,253,255,256,257,311,312, 314,371,372,374,375,401
EXT	420	241,242
NBC	430	211
	431	213,251
DM	441	231
	442	231
MAT	451	211,213,251,311
HIE	461	
TG	481	
TG	482	

Figure 2-4.--Aerial Gunner/Observer Flight Update Chaining--Continued.