CHAPTER 1

C-9 PILOT

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 1

C-9B PILOT

100. PROGRAMS OF INSTRUCTION (POI) FOR BASIC, TRANSITION, CONVERSION, AND REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground Training (Squadron)	SOES
2	Cockpit Procedures/Flight Simulator	Flight Safety Int'l.
4	Flight Training	SOES

110. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Simulator Instruction	Flight Safety Int'l.

111. SQUADRON LEVEL TRAINING

Orientation
Local Course Rules
Preflight Inspection
Cockpit Familiarization and Crew Coordination
Start/Taxi/Shutdown Procedures
Postflight Inspection
Systems Brief
NATOPS Open and Closed Book Examinations

112. FLIGHT SIMULATOR TRAINING

STAGE	FLIGHTS	HOURS	PERCENT
Familiarization	**5**	**20.0**	**25.0**

120. FLIGHT TRAINING FOR BASIC, TRANSITION, CONVERSION, AND REFRESHER PILOT

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-	25.0
Familiarization and Instruments	3	6.0	18.0
Night Familiarization	1	2.0	6.0
Copilot Familiarization	2	6.0	6.0
T3P Check	1	2.0	5.0
Total	**7**	**16.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Copilot Review	1	2.0	4.0
T2P Check	1	2.0	6.0
Total	**2**	**4.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
TAC Route Check	1	6.0	5.0
NTAC Overwater Check	1	8.0	5.0
TAC Familiarization	1	2.0	5.0
Total	**3**	**16.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Transport Aircraft Commander (TAC)	**1**	**2.0**	**15.0**
Total	**13**	**38.0**	**100.0**

121. FLIGHT TRAINING FOR INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

STAGE	FLIGHTS	HOURS
Instructor Under Training	2	4.0
Requirements, Qualifications, and Designations	3	6.0
Total	**5**	**10.0**

130. SIMULATOR TRAINING

1. Purpose. Familiarize all pilots with C-9B normal cockpit procedures, crew coordination, systems operation and limitations, emergency procedures and to introduce instrument flight procedures.

2. General

a. Aircrew coordination shall always be stressed in training all pilots.

b. Pilots Under Instruction will be in the left seat for all flights unless otherwise noted in the training syllabus.

3. Simulator Training (5 Periods, 20.0 Hours)

SFAM/INST-100 4.0 T,C,R 2F3

Goal. Simulator configuration, characteristics and initial familiarization.

Requirement. Seat position and pedal adjustments. Takeoff data computation. Cockpit setup and checklist (expanded). Crew briefing. Engine starts (normal). Taxi techniques (brakes, steering, reversing). Normal takeoff and climb to median altitude (EPR management), level turns (manual rudder demonstration), accelerate to Vmo and decelerate with speed brake (note over speed warning). Steep turns. Roll rate demonstration. Demonstrate flight characteristics with configuration changes: landing gear, slats, flaps, slow flight. Stick shaker demonstration (clean, turning and

landing). Two engine flight director ILS and landing. Time permitting, repeat takeoff and ILS. After landing, review shutdown and before leaving aircraft procedures.

SFAM/INST-101 4.0 T,C,R 2F3

Goal. Flight characteristics demonstration.

Requirement. Cockpit setup and checklist, APU fire on start. Engine starts: hot or hung. Instrument takeoff (ceiling 100 feet) and vector climb (12,000-14,000 feet). Dutch roll demonstration. High sink demonstration. Slow flight. Steep turns. Approach to stalls clean, turning, landing. Two engine autopilot ILS and landing (time permitting). VOR approach and landing. Manual spoilers. After landing, shutdown and before leaving aircraft procedures.

SFAM/INST-102 4.0 T,C,R 2F3

Goal. Introduce emergency procedures.

Requirement. Cockpit setup and checklist. Engine starts: battery and cross bleed. Rejected takeoff (engine failure prior to Vl). Ice protection during takeoff and climb (engine, airfoil and fuel). Normal takeoff and SID departure. Climb to FL350 using normal climb schedule. Manual pressurization during climb. Emergency descent to 14,000 feet. Steep turns. Approach to stalls. Unusual attitudes. Slow flight (optional). Area arrival and holding. Two engine Flight Director (F/D) ILS and missed approach. Engine failure in flight. One engine raw data ILS and landing.

SFAM/INST-103 4.0 T,C,R 2F3

Goal. Review abnormal operations procedures.

Requirement. Cockpit setup and checklist. Engine start (hot or hung start optional). Engine failure prior to Vl. Engine failure at Vl +10. One engine F/D ILS and published missed approach. Airstart the failed engine. Back course ILS to full stop.

SFAM/INST-104 4.0 T,C,R 2F3

Goal. Emergency procedures refinement.

Requirement. Cockpit setup and checklist. Engine start (CSD oil pressure low light). Crosstie failure or crosstie lockout. Engine failure at Vl ±10. One engine F/D ILS and missed approach. Air start the failed engine. RADAR vector climb to 12,000 to 14,000 feet. Tail compartment high temp light on. Loss of airspeed indication. ILS approach and landing without air speed indication. Takeoff and climb with runaway trim, ILS approach with jammed stabilizer. Non precision approach and missed approach. Raw data ILS approach and landing.

140. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Purpose. Familiarize all pilots with C-9B flight characteristics, normal cockpit procedures, crew coordination, systems operations and limitations, emergency procedures, and gain designation as a Transport Third Pilot.

1. General

a. The time required to train a C-9 pilot from Transport Third Pilot (T3P) to Transport Aircraft Commander (TAC) is listed in the NATOPS Flight Manual, but will vary from that minimum depending on previous pilot experience. Training beyond T3P is accomplished to a great extent in conjunction with operational flights. Upgrade checks for T2P, TAC, and IUT will be accomplished on dedicated training flights.

b. Minimum crew shall consist of an instructor pilot, pilot under instruction and crew chief for all training flights.

c. All flights shall be flown with a designated NATOPS Instructor.

d. Local commands are granted the authority to waive requirements that are not applicable to the local operating environment.

e. Flights annotated with an "N" shall be flown at night with the intent that these night flights will be flown at least 30 minutes after official sunset. Flights annotated with "(N)" may be flown at night.

f. All flights annotated with an "E" shall be evaluated per T&R Manual, Volume 1, Chapter 6, Paragraph 6001.c.

2. Refly Interval. Figure 1-1 shows refly interval and Mission Readiness Percentage for MOS 7551.

3. Aircrew Evaluation Flights. All pilots are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-600).

b. Instrument Check (RQD-601).

c. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.

4. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

141. MISSION CAPABLE TRAINING

1. Familiarization and Instruments

a. Purpose. Instruct PUI in aircraft ground handling; VFR and IFR flight characteristics and limitations, with emphasis on instrument flight procedures and proper response to aircraft emergency situations.

b. Crew Requirement. PUI/IP/CC.

c. Flight Training (3 Flights, 6.0 Hours)

FAM/INST-l00	2.0	T,C,R 1 ACFT

Goal. C-9 flight introduction.

Requirement. Brief APU, flight director/instruments, approach/ landing configuration and speeds and performance data. Introduce preflight inspection, operation of cabin doors, cockpit emergency equipment and exits, cockpit checklist, engine start, taxi, braking and steering techniques and crew briefing items. Introduce rolling takeoff (15° flaps) steep turns, roll rate, high sink rate, approach to stalls, power management and ILS/GCA approaches. Perform touch-and-go landings and full stop landings with auto spoiler.

FAM/INST-101 2.0 T,C,R 1 ACFT

Goal. Review normal flight maneuvers.

Requirement. Brief engines, air conditioning, approach/landing configuration/speeds, holding and procedure turns, missed approach, critical action emergency procedures and performance data. review preflight inspection, cockpit checklist, engine start, taxi, braking and steering techniques and crew briefing items. Introduce rolling takeoff (5° flaps), engine shutdown/airstart, and holding. Review visual, ILS/GCA, non precision and missed approaches, touch-and-go landings and full stop landings with auto spoiler.

FAM/INST-102 2.0 T,C,R 1 ACFT

Goal. Introduce emergency procedures.

Requirement. Brief fuel system, pneumatic system, anti-ice system, oxygen system, high altitude/high speed characteristics, critical action emergency procedures, and performance data. Review preflight, start (cross bleed), taxi items on FAM/INST-l00 and FAM/INST-l0l. Review rolling take Off (15° flaps). Introduce simulated engine failure after Vl, use of autopilot and emergency descent. Perform visual, GCA and ILS approaches with raw data inputs, coupled autopilot, one engine, zero flaps or slats retracted as appropriate to touch-and-go or full stop landing. One engine with/reverse and manual spoiler landing required.

2. Night Familiarization

a. Purpose. Become proficient in night operations and emergency responses at night.

b. Crew Requirement. PUI/IP/CC.

c. Flight Training (1 Flight, 2.0 Hours)

NFAM-110 2.0 T,C,R 1 ACFT N

Goal. Review FAM/INST maneuvers at night.

Requirement. Brief electrical system, electrical fire and smoke/fume elimination. Introduce interior/exterior lighting. Review preflight/start/taxi items covered on FAM/INST-100 through FAM/INST-102. Perform rolling takeoff with 15° flaps, simulated, derated engine failure visual, ILS and GCA

approaches with a single engine to a missed approach as appropriate. Review touch-and-go and full stop landings.

3. Copilot Familiarization

a. Purpose. To instruct the PUI in the responsibilities and functions of the pilot flying in the right seat.

b. Crew Requirement. PUI/IP/CC.

c. Flight Training (2 Flights, 6.0 Hours)

FAM-120 2.0 T,C,R 1 ACFT

Goal. PUI in right seat to perform duties of copilot.

Requirement. Review preflight/start/taxi crew briefing items covered on previous flights. Introduce engine battery start static takeoffs (5° flaps, derated thrust), and manual pressurization. Review all approaches and landings covered on previous flights. Introduce maximum performance full stop and simulated single engine landings.

FAM-121 4.0 T,C,R 1 ACFT

Goal. Introduce long range navigation and review all previous instruction.

Requirement. Brief OPARS flight planning, flight in high altitude structure, and line mission considerations. Introduce high altitude flight regime to include the following: Filing criteria, long range cruise considerations, and navigation procedures. Review as necessary, any items covered on previous syllabus flights. Emphasize emergency procedures and abnormal situation responses.

4. T3P Check

a. Purpose. Qualify the PUI as copilot (T3P) for operational flights in the C-9B aircraft.

b. Crew Requirement. PUI/IP/CC.

c. Prerequisite. NATOPS open and closed book examinations.

d. Flight Training (1 Flight, 2.0 Hours)

CK-130 2.0 T,C,R E 1 ACFT

Goal. Evaluation sortie.

Requirement. PUI to demonstrate the ability to meet NATOPS qualification per NATOPS evaluation criteria. The flight evaluation is designed to measure with the maximum objectivity the degree of standardization demonstrated by the PUI and to ensure safety of flight.

142. MISSION READY TRAINING

1. Copilot Review

a. Purpose. Review procedures, normal and emergency, and the responsibilities of the copilot.

b. Crew Requirement. T3P/IP/CC.

c. Flight Training (1 Flight, 2.0 Hours)

REV-200	2.0	T,C,R 1 ACFT

Goal. Refine copilot performance.

Requirement. T3P in the left seat to perform duties of the pilot. Review preflight/start/taxi crew briefing, items covered on previous flights, emphasize emergency procedures and abnormal situation responses.

2. T2P Check

a. Purpose. Qualify the T3P as a T2P copilot for operational flights in the C-9B aircraft.

b. Crew Requirement. T3P/IP/CC.

c. Prerequisite. NATOPS open and closed book examinations.

d. Flight Training (1 Flight, 2.0 Hours)

CK-210	2.0	T,C,R E 1 ACFT

Goal. Evaluation sortie.

Requirement. T3P to demonstrate the ability to meet the NATOPS evaluation criteria. Flight is designed to measure with maximum objectivity the degree of standardization demonstrated by the PUI and his ability in handling the aircraft under any circumstances.

143. MISSION QUALIFICATION TRAINING

1. TAC Route Check

a. Purpose. Conduct a route check flight prior to upgrade to TAC.

b. Crew Requirement. T2P/IP/CC/Loadmaster (LM)/Flight Attendant (FA).

c. Flight Training (1 Flight, 6.0 Hours)

NAV-300	6.0	T,C,R E 1 ACFT

Goal. Pilot under instruction performs extended range operations.

Requirement. T2P will demonstrate the ability to manage a crew and aircraft away from home station. Flight must include a RON.

2. TAC Overwater Check

a. Purpose. Conduct an overwater check flight for T2P prior to upgrade

and to maintain ICAO proficiency for the TAC (6 month refly). Flight must include a RON and an overwater leg of at least 1,300 nm.

b. Crew Requirement. T2P/IP/CC/LM/FA.

c. Flight Training (1 Flight, 8.0 Hours)

NAV-310 8.0 T,C,R 1 ACFT

Goal. Overwater navigation.

Requirement. TAC/T2P to demonstrate the ability to manage a crew and aircraft on an extended, overwater flight under ICAO rules.

3. TAC Familiarization

a. Purpose. Review all previously covered items and ensure that the T2P is adequately prepared for a TAC check.

b. Crew Requirement. T2P/IP/CC.

c. Flight Training (1 Flight, 2.0 Hours)

FAM-320 2.0 T,C,R 1 ACFT

Goal. Review all previous maneuvers.

Requirement. Review all C-9B previous NATOPS normal and emergency procedures. Demonstrate ability to lead and coordinate crew during emergencies, plus meet all previous NATOPS requirements.

144. FULL-MISSION QUALIFICATION TRAINING

1. Purpose. Upgrade the PUI to Transport Aircraft Commander (TAC).

2. Crew Requirement. T2P/IP/CC.

3. Prerequisite. NATOPS open and closed book examinations.

4. Flight Training (1 Flight, 2.0 Hours)

CK-400 2.0 T,C,R E 1 ACFT

Goal. Evaluation flight.

Requirement. T2P to demonstrate ability to meet NATOPS evaluation criteria for TAC. The flight evaluation is designed to measure with the maximum objectivity the knowledge and abilities of the PUI.

150. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Purpose. Standardize instructor pilot in procedures for the C-9B aircraft.

2. Crew Requirement. IUT/IP/CC.

3. Flight Training (2 Flights, 4.0 Hours)

IUT-500 2.0 T,C,R 1 ACFT

Goal. Instruction introduction.

Requirement. IUT in right seat practice all maneuvers in previous syllabi. Demonstrate ability to perform all maneuvers in standardized manner, and to recognize and correct common student errors.

IUT-501 2.0 T,C,R E 1 ACFT

Goal. IUT standardization check.

Requirement. IUT in right seat. Review items covered on IUT-500 and demonstrate the requisite instructional ability and standardization expected of an instructor pilot.

151. SPECIAL TRAINING

1. Purpose. Conduct evaluation flights.

2. General. Flights flown in this stage are evaluation flights; consequently, per T&R Manual, Volume 1, CRP is not awarded.

3. Prerequisites. Reference the C-9B NATOPS Flight Manual, OPNAVINST 3710.7_, and applicable publications.

4. Crew Requirement. IUT/IP/CC.

5. Flight Training (3 Flights, 6.0 Hours)

RQD-600 3.0 E 1 ACFT

Goal. Annual NATOPS Evaluation.

Requirement. Proficiency in the utilization of all aspects of the C-9. The proficiency expected by the evaluator in this flight shall be commensurate with the experience of the pilot under evaluation.

RQD-601 1.5 E 1 ACFT (N)

Goal. Annual Instrument Evaluation.

Requirement. The evaluation shall be conducted per the criteria contained within the Instrument Flight Manual. File and fly an instrument round robin using all navigation equipment available. Evaluate all phases of instrument flight to include precision and non-precision approaches, partial panel, and instrument holding. Demonstrate proficiency in handling instrument related emergencies.

RQD-602 1.5 E 1 ACFT

Goal. Conduct evaluation for designation as a Functional Check Pilot (FCP).

Requirement. Per a locally generated syllabus, conduct an evaluation with a previously designated FCP.

160. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: C-9 MOS: 7551 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
SFAM/INST	100	4.0	C	5.0	X	X	X		S
	101	4.0	C	5.0	X	X	X		S
	102	4.0	C	5.0	X	X	X		S
	103	4.0	C	5.0	X	X	X		S
	104	4.0	C	5.0	X	X	X		S
FAM/INST	l00	2.0	*	6.0	X	X	X		1 ACFT
	101	2.0	*	6.0	X	X	X		1 ACFT
	102	2.0	*	6.0	X	X	X		1 ACFT
NFAM	110	2.0	*	6.0	X	X	X		1 ACFT N
FAM	120	2.0	*	3.0	X	X	X		1 ACFT
	121	4.0	*	3.0	X	X	X		1 ACFT
CK	130	2.0	*	5.0	X	X	X	X	1 ACFT
MISSION READY TRAINING									
REV	200	2.0	*	4.0	X	X	X		1 ACFT
CK	210	2.0	C	6.0	X	X	X	X	1 ACFT
MISSION QUALIFICATION TRAINING									
NAV	300	6.0	*	5.0	X	X	X	X	1 ACFT
	310	8.0	6	5.0	X	X	X		1 ACFT
FAM	320	2.0	*	5.0	X	X	X		1 ACFT
FULL-MISSION QUALIFICATION TRAINING									
CK	400	2.0	C	15.0	X	X	X	X	1 ACFT
INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS									
IUT	500	2.0	*	N/A	X	X	X		1 ACFT
	501	2.0	*	N/A	X	X	X	X	1 ACFT
SPECIAL TRAINING									
RQD	600	2.0	C	N/A				X	1 ACFT
	601	2.0	C	N/A				X	1 ACFT (N)
	602	2.0	*	N/A				X	1 ACFT

Figure l-1.--MOS 7551 Refly Interval, Mission Readiness Percentage.

PILOT FLIGHT UPDATE CHAINING

STAGE	FLIGHT	SORTIES UPDATED
SFAM/INST	200	
CK	210	200
NAV	300	200,210
	310	200,210,300
FAM	320	200,210
CK	400	200,210,320

Figure 1-2.--Pilot Flight Update Chaining

CHAPTER 2

C-9 CREW CHIEF

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 2

C-9 CREW CHIEF

200. PROGRAMS OF INSTRUCTION (POI) FOR BASIC, TRANSITION, CONVERSION AND REFRESHER CREW CHIEFS

WEEKS	COURSE/PHASE	ACTIVITY
1-3	Ground Training	SOES
4-16	Flight Training	SOES

210. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Water Survival	MCAS Cherry Point
Aviation Physiology	MCAS Cherry Point
Power Plants and Airframes School	Scott AFB
Pratt and Whitney School	Hartford, CT

211. SQUADRON LEVEL TRAINING

General Aircraft Description
Aircraft Emergency Systems
Personal Flying Equipment Requirements
Phase Examinations
NATOPS Open and Closed Book Examinations

212. FLIGHT SIMULATOR TRAINING

STAGE	FLIGHTS	HOURS	PERCENT
Familiarization	5	20.0	0.0

220. FLIGHT TRAINING FOR BASIC, TRANSITION, CONVERSION AND REFRESHER CREW CHIEFS

1. MISSION CAPABLE TRAINING

	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-	25.0
Familiarization	14	42.0	28.0
Mission Capable Check	1	3.0	7.0
Total	**15**	**45.0**	**60.0**

2. MISSION READY TRAINING

	FLIGHTS	HOURS	PERCENT
Familiarization	11	33.0	6.6
Mission Ready Check	1	3.0	3.4
Total	**12**	**36.0**	**10.0**

3. MISSION QUALIFICATION TRAINING

	FLIGHTS	HOURS	PERCENT
Familiarization	**2**	**6.0**	**15.0**

4. Full-Mission Qualification Training

	FLIGHTS	HOURS	PERCENT
Check Ride	**1**	**4.0**	**15.0**
Total for Basic, Transition, Conversion and Refresher Crew Chief	**30**	**91.0**	**l00.0**

230. SIMULATOR TRAINING. Familiarize all crew chiefs with the C-9 normal cockpit procedures, crew coordination, systems operations and limitations, emergency procedures and to introduce instrument flight procedures and VFR scan patterns. Flights duplicate those outlined in C-9 pilot simulator training.

240. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. The time required to train a crew chief will vary depending on previous experience. All training will be conducted in conjunction with operational flights, test flights, and/or pilot training flights.

b. Minimum crew will consist of a pilot, copilot, crew chief instructor (CCI), and crew chief under instruction (CCUI).

c. Flights annotated with an "N" shall be flown at night with the intent that these night flights will be flown at least 30 minutes after official sunset. Flights annotated with "(N)" may be flown at night.

d. All flights annotated with an "E" shall be evaluated per T&R Manual, Volume 1, Chapter 6, Paragraph 6001.c.

2. Syllabus Assignment. Basic, transition, and conversion crew chiefs will be required to fly the entire syllabus.

3. Refly Interval. Figure 1-1 shows refly interval and Mission Readiness Percentage for MOS 7551.

4. Aircrew Evaluation Flights. All pilots are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-600).

b. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.

5. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

241. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. Familiarize the CCUI with the C-9 aircraft. Instruction will emphasize adherence to NATOPS procedures, operation of aircraft systems, and aircraft servicing.

b. Crew Requirement. P/CP/CCI/CCUI

c. Flight Training (14 Flights, 42.0 Hours)

FAM-l00/101	3.0	T,C,R 1 ACFT

Goal. Introduce auxiliary power unit (APU) airborne use, daily/postflight inspection, servicing and turnaround of engine system.

FAM-102/103	3.O	T,C,R 1 ACFT

Goal. Review previous instruction and introduce fuel system.

FAM-104/105	3.0	T,C,R 1 ACFT

Goal. Review all previous instruction and introduce AC and DC electrical systems.

FAM-106-108	3.0	T,C,R 1 ACFT

Goal. Review all previous instruction with emphasis on AC/DC electrical systems and introduce hydraulic system.

FAM-109/110	3.0	T,C,R 1 ACFT

Goal. Review DC electrical and hydraulic system.

FAM-lll-113	3.0	T,C,R 1 ACFT

Goal. Review hydraulic system and previously introduced instruction as necessary.

2. Mission Capable Check

a. Purpose. Review all areas of instruction above and ensure that the CCUI has attained a high degree of proficiency and knowledge of all systems.

b. Crew Requirement. P/CP/CCI/CCUI

c. Flight Training (1 Flight, 3.0 Hours)

CK-120	3.0	T,C,R 1 ACFT

Goal. Mission capable check.

Requirement. Progress check. CCUI will demonstrate a high degree of proficiency and knowledge of the A/C systems covered in all previous instruction.

242. MISSION READY TRAINING

1. Familiarization

a. Purpose. Further instruct the CCUI on the C-9 aircraft and the duties and responsibilities of the C-9 crew chief.

b. Crew Requirement. P/CP/CCI/CCUI

c. Flight Training (11 Flights, 33.0 Hours)

FAM-200/201	3.0	T,C,R 1 ACFT

Goal. Introduce pneumatic system.

FAM-202/203	3.0	T,C,R 1 ACFT

Goal. Review pneumatic system and introduce ice protection system.

FAM-204	3.0	T,C,R 1 ACFT

Goal. Introduce fire warning and protection system.

FAM-205	3.0	T,C,R 1 ACFT

Goal. Review FAM-204.

FAM-206	3.0	T,C,R 1 ACFT

Goal. Introduce oxygen system.

FAM-207	3.0	T,C,R 1 ACFT

Goal. Review FAM-206.

FAM-208	3.0	T,C,R 1 ACFT

Goal. Introduce emergency procedures (all types). CCUI is required to memorize all bold face emergency procedure items in the C-9 NATOPS Flight Manual.

FAM-209	3.0	T,C,R l ACFT

Goal. Review FAM-208.

FAM-210 3.0 T,C,R 1 ACFT

Goal. Introduce C-9 operations limitations.

2. Mission Ready Check

a. Purpose. Evaluate and ensure the CCUI has attained a high degree of proficiency and knowledge of the mission ready training phase of instruction.

b. Crew Requirement. TPC/CP/CCI/CCUI.

c. Prerequisite. NATOPS open and closed book examinations.

d. Flight Training (1 Sortie, 3.0 Hours)

CHK-220 3.0 T,C,R E 1 ACFT

Goal. Evaluate the CCUI's proficiency and knowledge of the 100 and 200 series sorties.

243. MISSION QUALIFICATION TRAINING

a. Purpose. Review all 100 and 200 series sorties leading to a NATOPS check.

b. Crew Requirement. P/CP/CCI/CCUI

c. Flight Training (2 Flights, 6.0 Hours)

FAM-300 3.0 T,C,R 1 ACFT

Goal. Review all 100 series leading to a NATOPS check.

FAM-310 3.0 T,C,R 1 ACFT

Goal. Review all 200 series sorties leading to a NATOPS check.

244. FULL-MISSION QUALIFICATION TRAINING

a. Purpose. Fully qualify CCUI for designation as a C-9 crew chief.

b. General. Upon successful completion of this phase of instruction CCUI may be designated as a C-9 Crew Chief.

c. Crew Requirement. P/CP/CCI/CCUI

d. Prerequisite. NATOPS open and closed book examinations.

e. Flight Training (1 Sortie, 4.0 Hours)

CK-400 4.0 T,C,R E 1 ACFT

Goal. NATOPS check flight.

Requirement. CCUI acting in capacity of crew chief will demonstrate his knowledge and ability to function as a C-9 crew chief.

250. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Reserved for future use.

260. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: C-9 MOS: 60XX CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	3.0	*	2.0	X	X	X		1 ACFT
	101	3.0	*	2.0	X	X	X		1 ACFT
	102	3.0	*	2.0	X	X	X		1 ACFT
	103	3.0	*	2.0	X	X	X		1 ACFT
	104	3.0	*	2.0	X	X	X		1 ACFT
	105	3.0	*	2.0	X	X	X		1 ACFT
	106	3.0	*	2.0	X	X	X		1 ACFT
	107	3.0	*	2.0	X	X	X		1 ACFT
	108	3.0	*	2.0	X	X	X		1 ACFT
	109	3.0	*	2.0	X	X	X		1 ACFT
	110	3.0	*	2.0	X	X	X		1 ACFT
	111	3.0	*	2.0	X	X	X		1 ACFT
	112	3.0	*	2.0	X	X	X		1 ACFT
	113	3.0	*	2.0	X	X	X		1 ACFT
CK	120	3.0	*	7.0	X	X	X		1 ACFT
MISSION READY TRAINING									
FAM	200	3.0	3	0.6	X	X	X		1 ACFT
	201	3.0	3	0.6	X	X	X		1 ACFT
	202	3.0	3	0.6	X	X	X		1 ACFT
	203	3.0	3	0.6	X	X	X		1 ACFT
	204	3.0	3	0.6	X	X	X		1 ACFT
	205	3.0	3	0.6	X	X	X		1 ACFT
	206	3.0	3	0.6	X	X	X		1 ACFT
	207	3.0	3	0.6	X	X	X		1 ACFT
	208	3.0	3	0.6	X	X	X		1 ACFT
	209	3.0	3	0.6	X	X	X		1 ACFT
	210	3.0	3	0.6	X	X	X		1 ACFT
CK	220	3.0	3	3.4	X	X	X	X	1 ACFT
MISSION QUALIFICATION TRAINING									
FAM	300	3.0	3	7.5	X	X	X		1 ACFT
	310	3.0	3	7.5	X	X	X		1 ACFT
FULL-MISSION OUALIFICATION TRAINING									
CK	400	4.0	C	15.0	X	X	X		1 ACFT

Figure 2-1--.MOS 60XX Refly Interval, Mission Readiness Percentage.

CREW CHIEF FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
FAM	200	
	201	200
	202	200,201
	203	200,201,202
	204	
	205	204
	206	
	207	206
	208	
	209	208
	210	200,201,202,203,204,205,206,207,208,209
CK	220	200,201,202,203,204,205,206,207,208,209,210
FAM	300	200
	310	200,201,202,203,204,205,206,207,208,209,210,220,300
CK	400	200,201,202,203,204,205,206,207,208,209,210,220,300,310

Figure 2-2.--MOS 60XX Crew Chief Flight Update Chaining

CHAPTER 3

C-9B LOADMASTER

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 3

C-9B LOADMASTER

300. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND CONVERSION LOADMASTER

WEEKS	COURSE/PHASE	ACTIVITY
1-3	Ground Training(includes the 2 week C-9 Loadmaster School)	SOES
4-12	Mission Capable Training	SOES
13-14	Mission Ready Training	SOES
15-16	Mission Qualification Training	SOES
17-18	Full-Mission Qualification Training	SOES

301. POI FOR REFRESHER LOADMASTER

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground Training	SOES
2-4	Mission Capable Training	SOES
5	Mission Ready Training	SOES
6	Mission Qualification Training	SOES
7-8	Full-Mission Qualification Training	SOES

302. POI FOR INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
26	Airborne Radio Operator/ Loadmaster School	MCAS Cherry Pt, NC
2	C-9 Loadmaster School	NAS Dallas, TX
2	Instructor Basic School	Camp Lejeune, NC
2-4	Flight Training	SOES

310. GROUND TRAINING

1. General. Trainee must be previously designated as a Flight Attendant on the C-9B aircraft. The trainee will attend the C-9B Loadmaster Course prior to completion of training.

2. Training

Week 1

Weight and Balance Theory and Formulas.
Weight and Balance Forms (DD Form 365).
Aircraft Limitations Passenger/Cargo Manifests.
Associated Paperwork.
Weight and Balance Form Computation utilizing Moment.
Weight and Balance Form Computation utilizing Load Adjuster.

Week 2

Cargo Limitations and Dimensions.
Dimensions of Main Cabin Area.

Dimensions of Cargo Doors.
Dimensions of Cargo Compartments.
Weight Restrictions for Decking and Pallets.
Loadmaster Equipment and Responsibilities.
Contained in NATOPS Manual (NAVAIR 01-C9BAAA-1).
Written Exam on Material in the Cargo Loading Manual (NAVAIR 1-C9BAAA-9-9).

Week 3

C-9 Configurations.
Loadex 1 SECO C.
Loadex 2 SECO G.
Loadex 3 Special Aircraft Configurations.

311. COURSES OF INSTRUCTION

COURSE	ACTIVITY
Water Survival	NAWSTP
Flight Physiology	SOES
C-9B Loadmaster School	NAS Dallas, TX

312. SQUADRON LEVEL TRAINING

General Aircraft Description
Aircraft Systems
Aircraft Emergency Equipment and Systems
Emergency Procedures
Loadmaster Equipment
Cargo Restraint Equipment
Weight and Balance Planning
Personal Flying Equipment Requirements
Phase Examinations
Aircraft Mission
NATOPS Open and Closed Book Examinations

320. FLIGHT TRAINING FOR BASIC AND CONVERSION LOADMASTER

1. Mission Capable Training

STAGE	SORTIES	HOURS	PERCENT
Basic Qualification	-	-	25.0
Familiarization	1	4.0	4.0
Cargo and Passenger Loading	8	32.0	8.0
VIP	3	12.0	9.0
NATOPS Evaluation Flight	1	4.0	14.0
	13	***52.0**	**60.0**

2. Mission Ready Training

STAGE	SORTIES	HOURS	PERCENT
Overwater Procedures	**2**	**12.0**	**10.0**

3. Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
Familiarization (Hazardous Cargo)	**3**	***9.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
Maximum Cargo	2	10.0	5.0
Loadmaster Check Flight	1	5.0	10.0
	3	***15.0**	**15.0**
Total for Basic and Conversion Loadmaster	**21**	***88.0**	**100.0**

NOTE: * Indicates estimated flight hours to completion.

321. FLIGHT TRAINING FOR REFRESHER TRAINING

STAGE	SORTIES	HOURS
Familiarization (Emergency Procedures)	1	5.0
Passenger Loading (1 Sortie Overwater)	3	*7.5
Cargo Loading (1 Sortie Hazardous Cargo)	4	*10.0
VIP	1	2.5
NATOPS Check	1	4.0
Total for Refresher Loadmaster	**10**	****29.0**

NOTES: (1) * Indicates estimated flight hours.
(2) ** Indicates estimated flight hours to requalification.
(3) Flight types may be WAIVED at the commanding officer's discretion.

322. INSTRUCTOR UNDER TRAINING

STAGE	SORTIES	HOURS
Instructor Under Training	2	9.0
Instructor Check Flight	1	3.0
	3	**12.0**

330. SIMULATOR TRAINING. Not Applicable.

340. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. The time to qualify a C-9B loadmaster will vary depending on previous experience and flight time availability. All loadmasters will be previously designated as a Flight Attendant in the C-9B. Training will generally be accomplished in conjunction with operational flights. A Basic Loadmaster shall be defined as a designated Flight Attendant, who has completed training and has been subsequently designated as a loadmaster on the C-9B aircraft. A Conversion Loadmaster shall be defined as a graduate of the ARO/Loadmaster School, who has been previously qualified as a KC-130 Loadmaster, and is assigned to fly the C-9B aircraft. A Refresher Loadmaster shall be defined as a C-9B loadmaster who has been assigned to other duty preventing currency in the C-9B aircraft for a period exceeding 12 months. Basic Loadmasters will complete all stages of training. Each Conversion Loadmaster will complete all

flights identified by a "C". All Refresher Loadmasters will complete all flights identified by an "R".

2. All of the duties will be performed IAW OPNAVINST 3710.7, current squadron directives, and NAVAIR's 01-C9BAAA-1, 01-C9BAAA-9, and 01-1B-50.

3. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

341. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. Familiarize the Loadmaster Under Instruction (LUI) with the C-9B aircraft and the duties and responsibilities of the Loadmaster during all emergency situations.

b. Flight Training (1 Sortie, 4.0 Hours)

FAM-100 4.0 C,R 1 ACFT

Goal. Introduce the LUI to the responses/action required during each airborne/ground emergency.

Requirements. The LUI will demonstrate the proper responses/ actions to the following emergency situations: rapid decompression/emergency descent, fuselage fire, smoke and fume elimination, in-flight door open warning, crash landing and ditching procedures. The LUI will demonstrate the use/refilling of walk around oxygen bottles and the use/location of all emergency equipment. The LUI will "donn" the restraining harness and demonstrate the procedure for securing the restraining harness.

Standard. All emergency procedures and responses must be per NAVAIR 01-C9BAAA-1.

2. Cargo and Passenger Loading

a. Purpose. Instruct and qualify the LUI in the performance of the duties required to load cargo and passengers. Emphasis will be placed on the adherence to NATOPS procedures, operation of aircraft equipment and all duties and procedures required of a qualified C-9B loadmaster.

b. Flight Training (7 Sorties, 28.0 Hours)

CPL-110 4.0 C 1 ACFT

Goal. Introduce the LUI to passenger/baggage loading procedures and Weight and Balance Form computation. Additionally, the LUI will be instructed on the proper pre-flight and post flight procedures.

Requirements. LUI observes and assists a qualified loadmaster during pre-flight, postflight, and passenger/baggage loading and offloading, to include the directing of ground loading equipment around the aircraft. LUI will compute a secondary

Weight and Balance Form. Emphasis will be on pre-flight of aircraft, in-flight responsibilities and aircraft postflight.

CPL-111 4.0 C 1 ACFT

Goal. Continuation of passenger and baggage loading procedures and Weight and Balance Form computation.

Requirements. LUI will demonstrate a thorough knowledge of all aircraft oxygen systems, to include; first aid oxygen, location of masks, types of masks, and requirements for availability of oxygen. Additionally, the LUI will stage baggage according to destination to expedite off-load. LUI will ensure the accuracy of all passenger manifests and record all "legload" information. Review of CPL-110.

CPL-112 4.0 C 1 ACFT

Goal. The LUI will perform all duties of C-9B loadmaster.

Requirements. The LUI will demonstrate a thorough knowledge of the aircraft lighting systems and lavatory and galley operation, to include restrictions and circuit breaker locations. Additionally, the LUI must complete the primary Weight and Balance Form, prior to scheduled take-off, on a flight consisting of multiple enroute stops emphasizing accurate passenger manifests, Weight and Balance Form, associated paperwork, pre-flight, in-flight and post flight responsibilities, and meal handling procedures.

CPL-113 4.0 C,R 1 ACFT

Goal. LUI observes and assists a qualified loadmaster during flight with mixed cargo and passengers.

Requirements. Flight will consist of multiple enroute stops emphasizing the reconfiguration of the aircraft to the "SECO C" and "SECO G" configuration, utilizing the "floor decal" locations. The LUI will demonstrate a thorough knowledge of the operation of the cargo door, cargo door restrictions, and associated hydraulic systems (to include circuit breaker locations). Additionally, the LUI will properly install the door sills. The LUI will compute a secondary Weight and Balance Form.

Standard. All duties will be performed per NAVAIR's 01-C9BAAA-1, 01-C9BAAA-9, and 01-1B-50. If required MCO P4030.19 will be observed.

CPL-114 4.0 C,R 1 ACFT

Goal. LUI observes and assists a qualified loadmaster during flight with mixed cargo and passengers.

Requirements. Flight will consist of multiple enroute stops emphasizing aircraft dimensions, compartment weight restrictions, and restraint criteria. The LUI will be instructed in the expeditious off-load of baggage. Additionally, the LUI will observe and assist with the staging and proper loading of cargo, the use of tie down equipment (to

include the cargo barrier net), safety considerations, and accurate passenger and cargo manifests.

CPL-115 4.0 C,R 1 ACFT

Goal. The LUI will observe and assist a qualified loadmaster during the loading and the unloading of palletized cargo.

Requirements. Flight will consist of multiple enroute stops. Emphasis will be placed on the procedures for loading and unloading palletized cargo. The use of established loading signals will be utilized during all loading and unloading evolutions. The LUI will compute the primary Weight and Balance Form and will determine the required tie down restraint. Safety of aircraft and personnel will be the primary consideration.

CPL-116 4.0 C,R 1 ACFT

Goal. Review of flights CPL-113 through CPL-115.

CPL-117 4.0 C,R 1 ACFT

Goal. Progress check, LUI performs all duties required of a C-9B loadmaster.

Requirements. Flight will consist of multiple enroute stops. Emphasis will be placed on Weight and Balance Form computation (prior to scheduled take-off), aircraft reconfiguration, appropriate tie down procedures, required tie down restraint; and safety in the use of all loading equipment. The LUI will be observed/evaluated on the directing of forklift operators and ground loading equipment around the aircraft.

3. VIP Procedures

a. Purpose. Qualify a LUI in the proper procedures when carrying passengers who are Code 7 and above.

b. Flight Training (3 Sorties, 12.0 Hours)

VIP-120 4.0 C 1 ACFT

Goal. The LUI will observe a qualified loadmaster on a flight carrying a passenger that is Code 7 and/or above.

Requirements. Emphasis will be placed on passenger comfort, VIP baggage handling, configuration of the aircraft, and the installation of the appropriate VIP placard. Weight and Balance Form computation will be accomplished by the Loadmaster Instructor (LMI).

Standard. All duties will be performed per current squadron policies and NAVAIR's 01-C9BAAA-1, 01-C9BAAA-9, and 01-1B-50.

VIP-121 4.0 C 1 ACFT

Goal. The LUI will assist a qualified loadmaster on a flight carrying a passenger who is a Code 7 and above.

Requirements. Emphasis will be placed on passenger comfort, VIP baggage handling, and VIP configuration, to include intermediate stop clean-up procedures. The LMI will complete the Weight and Balance Form for the aircraft.

VIP-122	4.0	C,R 1 ACFT

Goal. Progress check.

Requirements. The LUI will perform all duties of a loadmaster on a flight carrying a passenger who is a Code 7 and/or above. Emphasis will be placed on passenger comfort, VIP baggage handling, aircraft preparation, and an accurate Weight and Balance Form.

4. NATOPS Check Flight

a. Purpose. Qualify an LUI as a mission capable loadmaster on the C-9B aircraft. Individual may fly as a qualified loadmaster, after completing flight NATOPS-130, while completing the remainder of the flight syllabus.

b. Flight Training (1 Sortie, 4.0 Hours)

NATOPS-130	4.0	C E 1 ACFT

Goal. Evaluation flight.

Requirements. The LUI will successfully complete a flight evaluation administered by a designated NATOPS Loadmaster Evaluator. All phases of Mission Capable Training will be reviewed with emphasis on NATOPS procedures, squadron procedures and accurate and timely Weight and Balance Form computation. All emergency procedures will be conducted or simulated per current NATOPS directives. Egress procedures, with and without passengers, will be conducted and/or simulated. The LUI must install, or have previously installed, the "cargo barrier net".

SCPL-140	N/A	C,R 1 ACFT

Goal. Cargo Passenger flight code for a loadmaster who is designated as, at a minimum, Mission Capable.

Requirements. Completed flight NATOPS-130 and is currently designated a Mission Capable Loadmaster.

342. MISSION READY TRAINING

1. Overwater Procedures

a. Purpose. Qualify the Mission Capable Loadmaster in overwater procedures with cargo and/or passengers aboard the aircraft.

b. Flight Training (2 Sorties, 12.0 Hours)

CPL 200	6.0	C 1 ACFT

Goal. The LUI observes and assists a qualified loadmaster during an overwater flight with passengers and/or cargo aboard.

Requirements. The LUI will observe and assist the loadmaster during pre-flight, in-flight and post flight duties. Emphasis will be placed on maximum passenger loads for overwater/ overland flights, proper baggage handling, accurate passenger manifests, Weight and Balance Form, legloads, required Customs/Agriculture procedures, appropriate emergency equipment and required briefings.

CPL-201 6.0 C,R E 1 ACFT

Goal. Stage Check. The LUI will perform all duties required of a Loadmaster on an overwater flight with passengers and/or cargo aboard while under the supervision of a NATOPS Evaluator. Successful accomplishment of this flight will result in the LUI being designated as a Mission Ready Loadmaster on the C-9B aircraft.

Requirements. The LUI will maintain accurate Weight and Balance Form, Customs/Agriculture Inspection Documents, passenger manifests and legload information. The LUI will conduct the appropriate pre-flight, in-flight and post flight duties.

CPL-210 N/A C,R 1 ACFT

Goal. Overwater flight code for a loadmaster who is designated as, at a minimum, Mission Ready.

Requirements. Completed flights CPL-200 and CPL-201 and is currently designated as a Mission Ready Loadmaster at a minimum.

343. MISSION QUALIFICATION TRAINING

1. Hazardous Cargo Familiarization

a. Purpose. Familiarize and qualify the mission ready loadmaster in the proper procedures when carrying hazardous cargo.

b. Flight Training (3 Sorties, 9.0 Hours)

FAM-300 3.0 C 1 ACFT

Goal. The LUI will observe a qualified loadmaster on a flight involving hazardous cargo.

Requirements. The LUI will observe a qualified loadmaster in the placing of hazardous cargo aboard the aircraft. The LUI will demonstrate a thorough knowledge and understanding of all restrictions concerning passengers while transporting hazardous cargo PER MCO P4030.19.

FAM-301 3.0 C 1 ACFT

Goal. The LUI will assist a qualified loadmaster on a flight involving hazardous cargo.

Requirements. The flight will consist of multiple enroute stops. The LUI will assist a qualified loadmaster in the placing of hazardous cargo aboard the aircraft. The LUI will demonstrate a thorough knowledge and understanding of all restrictions concerning passengers while carrying hazardous cargo per MCO P4030.19. Additionally, the LUI will explain all charts, required documentation for carrying hazardous cargo and Chapter 3 of MCO P4030.19. The LUI will ensure that all hazardous cargo documentation is maintained and the Weight and Balance Form is completed.

FAM-302 3.0 C,R E 1 ACFT

Goal. Stage check. The LUI will perform all duties of a Loadmaster on a flight carrying hazardous cargo with and/or without passengers under the supervision of a NATOPS Evaluator. Successful completion of this flight will result in the LUI being designated as a Mission Qualified loadmaster on the C-9B aircraft.

Requirements. Emphasis will be on total compliance with MCO P4030.19 to include all required forms, any deviations and/or waivers, and Pilot In Command required briefings. The LUI will compute the Weight and Balance Form and will also complete and file all flight related paperwork.

FAM-310 N/A C,R 1 ACFT

Goal. Hazardous cargo flight code for a loadmaster who is designated, at a minimum, Mission Qualified.

Requirements. Complete flight FAM-300 through FAM-302 and is currently designated as Mission Qualified.

c. External Syllabus Support. All Loadmasters must attend a Hazardous Cargo School. The 2 week course offered at Aberdeen Proving Ground, Maryland, will be the preferred course to attend. This course must be completed prior to the initial flight in the Mission Qualified loadmaster training stage.

344. FULL-MISSION QUALIFICATION TRAINING

1. Maximum Cargo Procedures

a. Purpose. Qualify the Mission Qualified loadmaster in procedures when carrying maximum cargo (SECO's E, F or H).

b. Flight Training (2 Sorties, 10.0 Hours)

CPL-400 5.0 C,R 1 ACFT

Goal. The LUI will observe and assist a qualified loadmaster on a flight carrying maximum cargo, (SECO's E, F or H).

Requirements. Emphasis will be placed on the reconfiguration of the aircraft to SECO E, F or H. The LUI will compute the primary Weight and Balance Form. The loading of the aircraft must be accomplished to allow the minimum amount of interference at intermediate stops with due consideration to

center of gravity limits. The LUI will ensure the cargo is properly restrained to the pallet and that no pallet exceeds the appropriate "G" factor limitation. The LUI will install the "barrier net".

CPL-401 5.0 C,R 1 ACFT

Goal. The LUI/Full-Mission Qualified loadmaster will perform the duties of a qualified loadmaster on a flight carrying maximum cargo, (SECO's E, F OR H) under the supervision of a qualified loadmaster.

Requirements. Emphasis will be placed on the reconfiguration of the aircraft to the required SECO configuration. The correct placement of all pallet restraints will be verified by the LUI. The LUI will compute the Weight and Balance Form with consideration to enroute stops and center of gravity limitations. The LUI will stage all cargo and load the aircraft with the safety of the aircraft, the safety of loading personnel and control of all loading equipment as the primary consideration.

2. Loadmaster NATOPS Evaluation Flight

a. Purpose. Qualify the Mission Qualified loadmaster in the C-9B aircraft to full-mission capable standards.

b. Flight Training (1 Sortie, 5.0 Hours)

LMX-410 5.0 C,R E 1 ACFT

Goal. To Fully-Mission Qualify the Loadmaster in the C-9B aircraft.

Requirements. The Mission Qualified loadmaster must meet or exceed all the NATOPS requirements to be designated as a "Full-Mission Qualified" Loadmaster on the C-9B aircraft.

350. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Instructor Under Training (IUT)

a. Purpose. Qualify an Airborne Radio Operator/Loadmaster (MOS 7382) as a Loadmaster Instructor.

b. Ground Training. Airborne Radio Operator/Loadmaster School, C-9B Loadmaster School, Instructor Management School. All Loadmaster Instructors must have completed the Airborne Radio Operator/Loadmaster School at MCAS Cherry Point, NC, and have a primary MOS of 7382. All Loadmaster Instructors must complete the Instructor Basic School (IBS) prior to their designation as a Instructor Loadmaster. c. Flight Training (3 Sorties, 9.0 Hours)

IUT-500 3.0 C,R 1 ACFT

Goal. The student Instructor Loadmaster will observe an Instructor Loadmaster train an LUI.

Requirement. The student Instructor Loadmaster will observe a Loadmaster Instructor train an LUI on a syllabus flight required by MCO P5300.17. The Loadmaster Instructor will emphasize the LUI's accuracy of Weight and Balance Forms, center of gravity limits, knowledge of aircraft, emergency procedures and proper cargo restraint.

IUT-501 3.0 C,R 1 ACFT

Goal. The student Loadmaster Instructor will demonstrate his ability to instruct an LUI, while under the supervision of an Instructor Loadmaster.

Requirements. The student Loadmaster Instructor will instruct an LUI in all areas of safety and crew position responsibilities. Accuracy of all paperwork, Weight and Balance Forms, "legload" entries, center of gravity restrictions, and required tie down procedures according to "G" factor restrictions will be emphasized.

IUT-502 3.0 C,R E 1 ACFT

Goal. Student Loadmaster Instructor Check Flight.

Requirements. The student Loadmaster Instructor will perform all duties required of a Loadmaster Instructor on a flight with an LUI.

2. Evaluator Check Flight

a. Purpose. Qualify a loadmaster as a NATOPS Evaluator.

b. Flight Training (1 Sortie, 4.0 Hours)

EV CHK-510 4.0 C,R E 1 ACFT

Goal. Qualify a loadmaster as a NATOPS Evaluator on the C-9B aircraft.

Requirement. The Loadmaster being evaluated will display the maturity, integrity, and knowledge of the aircraft required to conduct a NATOPS evaluation.

360. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: C-9B CREW POSITION: LOADMASTER

STAGE	FLIGHT#/ TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION CAPABLE TRAINING								
FAM	100	4.0	*	4.0	X	X		1 ACFT
CPL	110	4.0	*	0.5	X			1 ACFT
	111	4.0	*	0.5				1 ACFT
	112	4.0	*	0.5	X			1 ACFT
	113	4.0	*	0.5	X	X		1 ACFT
	114	4.0	*	1.0	X	X		1 ACFT
	115	4.0	*	1.0	X	X		1 ACFT
	116	4.0	*	1.0	X	X		1 ACFT
	117	4.0	*	1.0	X	X		1 ACFT
VIP	120	4.0	*	3.0	X			1 ACFT
	121	4.0	*	3.0	X			1 ACFT
	122	4.0	*	3.0	X	X		1 ACFT
NATOPS CK	130	4.0	C	14.0	X	X	X	1 ACFT
	140	N/A	C	---	X	X		1 ACFT
MISSION READY TRAINING								
CPL	200	6.0	C	5.0	X			1 ACFT
	201	6.0	C	5.0	X	X	X	1 ACFT
	210	N/A	C	---	X	X		1 ACFT
MISSION QUALIFICATION TRAINING								
FAM	300	3.0	C	5.0	X			1 ACFT
	301	3.0	C	5.0	X			1 ACFT
	302	3.0	C	5.0	X	X	X	1 ACFT
	310	N/A	C	---	X	X		1 ACFT
FULL-MISSION QUALIFICATION TRAINING								
CPL	400	5.0	C	2.5	X	X		1 ACFT
	401	5.0	C	2.5	X	X		1 ACFT
LMX	410	5.0	C	10.0	X	X	X	1 ACFT
INSTRUCTOR UNDER TRAINING								
IUT	500	3.0	C	---	X	X		1 ACFT
	501	3.0	C	---	X	X		1 ACFT
	502	3.0	C	---	X	X	X	1 ACFT
EV CHK	510	4.0	C	---	X	X	X	1 ACFT

Figure 3-1. Loadmaster Refly Interval, Mission Readiness Percentage.

LOADMASTER FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
CPL	200	201 200
	210	200,201
FAM	300	
	301	300
	302	200,201,210,300,301
	310	300,301,302
CPL	400	
	401	400
LMX	410	200,201,210,300,301,302,310,400,401
IUT	500	
	501	
	502	
EV CHK	510	

Figure 3-2. Loadmaster Flight Update Chaining.

CHAPTER 4

C-9 FLIGHT ATTENDANT

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 1

C-9 FLIGHT ATTENDANT

400. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND REFRESHER FLIGHT ATTENDANT

WEEKS	COURSE	ACTIVITY
1-4	Ground Training	SOES
5-16	Flight Training	SOES

401. INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1	Flight Training	SOES

410. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Water Survival	NAWSTP Facility
Flight Physiology	MCAS Cherry Point

411. SQUADRON LEVEL TRAINING

Emergency Procedures
Preflight/Postflight Procedures
Passenger Handling
Personal Flying Equipment Requirements
Ground Support Equipment/Servicing
NATOPS Open and Closed Book Examination
Aircraft Limitations and Descriptions
Flight Attendant Responsibilities
Crew Coordination

420. FLIGHT TRAINING FOR BASIC AND REFRESHER FLIGHT ATTENDANT

1. Mission Capable Training

STAGE	SORTIES	HOURS	PERCENT
Basic Qualification	-	-	25.0
Familiarization	1	4.0	5.0
Flight Attendant Procedures	2	10.0	5.0
Passenger Handling Procedures	2	10.0	5.0
VIP Procedures	2	10.0	10.0
NATOPS Check	1	4.0	10.0
Total	**8**	**38.0**	**60.0**

2. Mission Ready Training

STAGE	SORTIES	HOURS	PERCENT
Overwater Procedures	**2**	**10.0**	**10.0**

3. Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
Loadmaster Procedures	**2**	**10.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
Cargo Loading Procedures	**2**	**10.0**	**15.0**
Total for Basic and Refresher Flight Attendant	**14**	**68.0**	**100.0**

421. FLIGHT TRAINING FOR INSTRUCTOR UNDER TRAINING

STAGE	SORTIES	HOURS
IUT-500	**1**	**4.0**

430. SIMULATOR TRAINING. Not applicable.

440. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. The time required to train a C-9 flight attendant will vary depending on background of individual. Personnel under instruction come from any MOS in the squadron. Training will be adapted accordingly. Training will be accomplished in conjunction with operational flights.

2. Minimum crew for all sorties of this syllabus shall consist of plot, copilot, crew chief, loadmaster instructor/flight attendant instructor and Flight Attendant Under Instruction (FAUI).

441. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. To acquaint the trainee with the C-9 aircraft, the duties of the flight attendant and the responsibilities during an emergency situation.

b. Flight Training (1 Sortie, 4.0 Hours)

FAM-100 4.0 R 1 ACFT

Goal. Emergency response drill.

Requirement. The FAUI will demonstrate proper response to the following emergencies; rapid decompression/emergency descent, fuselage fire, smoke and fumes elimination, door warning in-flight, crash landing/ditching. The FAUI demonstrates use and refilling of walk around oxygen bottles and location and use of all emergency equipment.

2. Flight Attendant Procedures

a. Purpose. To qualify a trainee as a flight attendant (FA) with emphasis on adherence to NATOPS procedures, operation of aircraft equipment and all duties and procedures required of a qualified flight attendant.

b. Flight Training (2 Sorties, 10.0 Hours)

FA-110 5.0 R 1 ACFT

Goal. Cabin facilities introduction.

Requirement. FAUI will be instructed in the following areas by a qualified flight attendant. Preflight responsibilities of the flight attendant, operation of heads, coffee makers, freezer, refrigerator and ovens, duties of the flight attendant during the flight and postflight duties. Review all material covered during ground training phase.

FA-111 5.0 R 1 ACFT

Goal. Progress check.

Requirement. FAUI will demonstrate his ability to satisfactorily perform the duties taught in FAM-100 and FAM-110.

3. Passenger Handling Procedures

a. Purpose. To instruct an FAUI in proper procedures of passenger handling.

b. Flight Training (2 Sorties, 10.0 Hours)

CPL-120 5.0 R 1 ACFT

Goal. FAUI will be instructed on flight attendant responsibilities on a passenger flight.

Mission. Areas to be introduced will include: passenger and baggage handling; responsibilities on turn arounds; handling, storing, preparing, and serving in-flight meals and RON procedures. Review previously covered material as necessary.

CPL-121 5.0 R 1 ACFT

Goal. Progress check.

Requirements. FAUI will demonstrate proficiency of material covered in CPL-120.

4. VIP Procedures

a. Purpose. To instruct an FAUI in the proper procedures when carrying "Code 7" and above.

b. Flight Training (2 Sorties, 10.0 Hours)

VIP-130 5.0 R 1 ACFT

Goal. FAUI will be instructed on flight attendants responsibilities on a VIP flight.

Requirement. Areas to be introduced will include: procedures during the flight and appearance during the flight. Review previously covered material as necessary.

VIP-131 5.0 R 1 ACFT

Goal. Progress check.

Requirement. FAUI will demonstrate proficiency of material covered in VIP-130.

5. NATOPS Check

a. Purpose. To qualify an FAUI for continuation of training on the C-9 aircraft.

b. Flight Training (1 Sortie, 4.0 Hours)

FA CHK-140 4.0 R 1 ACFT

Goal. Evaluation flight.

Requirement. FAUI will successfully complete a flight evaluation administered by a designated NATOPS flight attendant evaluator. All phases of training will be covered with particular attention given to NATOPS and emergency procedures.

Prerequisite. NATOPS open and closed book examinations.

442. MISSION READY TRAINING

1. Purpose. To instruct an FAUI in procedures required when flying overwater.

2. Flight Training (2 Sorties, 10.0 Hours)

CPL-200 5.0 R 1 ACFT

Goal. FAUI will be instructed on procedures required of flight attendant on transoceanic flights.

CPL-201 5.0 R 1 ACFT

Goal. Progress check.

Requirement. FAUI will demonstrate proficiency of material covered in CPL-120.

443. MISSION QUALIFICATION TRAINING

1. Purpose. To acquaint an FAUI with the loadmaster procedures required for loading cargo aboard the aircraft.

2. Flight Training (2 Sorties, 10.0 Hours)

FAM-300 5.0 R 1 ACFT

Goal. Servicing introduction and review of previous instruction.

Requirement. FAUI will be instructed in the following areas by a qualified loadmaster. Servicing of heads to include maintenance of servicing carts and a review of holding tank capabilities of the aircraft, servicing of fresh water cart and capacities of the holding tank of aircraft. Review previously covered material as necessary.

FAM-301 5.0 R 1 ACFT

Goal. Progress check.

Requirement. FAUI will demonstrate use and knowledge of FAM-300.

444. FULL-MISSION QUALIFICATION TRAINING

1. Purpose. To acquaint an FAUI with the procedures required for loading cargo aboard the aircraft and fully qualify FAUI for designation as a flight attendant.

2. Flight Training (2 Sorties, 10.0 Hours)

CPL-400 5.0 R 1 ACFT

Goal. Flight attendant responsibilities on a cargo flight.

Requirement. FAUI will be instructed on the following equipment uses: ball decking, conveyor assembly, pallets, restraints, "brown" lines, tiedown devices and handling of cargo in cargo areas. FAUI should assist in two aircraft reconfigurations, one for an 89 seat configuration and one for a 65+2. Review previously covered material as necessary.

CPL-401 5.0 R E 1 ACFT

Goal. Progress check.

Requirement. FAUI will demonstrate proficiency on actual cargo flight of material covered in CPL-400.

450. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Instructor Under Training (IUT)

a. Purpose. To qualify a flight attendant as a flight attendant instructor.

b. Flight Training (1 Sortie, 4.0 Hours)

IUT-500	4.0	R E 1 ACFT

Goal. Instructor qualification.

Requirement. Flight attendant will demonstrate knowledge of all NATOPS Flight Attendant procedures and capability of instructing an FAUI.

Prerequisite. NATOPS open and closed book examinations.

460. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: C-9 MOS: 60XX CREW POSITION: FLIGHT ATTENDANT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	4.0	B	5.0			X		1 ACFT
FA	110	5.0	B	2.5			X		1 ACFT
	111	5.0	B	2.5			X		1 ACFT
CPL	120	5.0	B	2.5			X		1 ACFT
	121	5.0	B	2.5			X		1 ACFT
VIP	130	5.0	B	5.0			X		1 ACFT
	131	5.0	B	5.0			X		1 ACFT
FA CHK	140	4.0	B	10.0			X		1 ACFT
MISSION READY TRAINING									
CPL	200	5.0	B	5.0			X		1 ACFT
	201	5.0	B	5.0			X		1 ACFT
MISSION QUALIFICATION TRAINING									
FAM	300	5.0	B	7.5			X		1 ACFT
	301	5.0	B	7.5			X		1 ACFT
FULL-MISSION QUALIFICATION TRAINING									
CPL	400	5.0	B	7.5			X		1 ACFT
	401	5.0	B	7.5			X	X	1 ACFT
INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS									
IUT	500	4.0	B				X	X	1 ACFT

Figure 4-1.--C-9 Flight Attendant Refly Interval, Mission Readiness Percentage

FLIGHT ATTENDANT FLIGHT UPDATE CHAINING

STAGE	SORTIES	SORTIES UPDATED
CPL	200	
	201	200
FAM	300	
	301	300
CPL	400	200,201
	401	200,201,400

Figure 4-1.--C-9 Flight Attendant Flight Update Chaining

CHAPTER 5

CT-39

FIGURES

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 5

CT-39

500. PROGRAMS OF INSTRUCTION

501. BASIC, TRANSITION, CONVERSION, AND REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground School (Squadron)	SOES
2	Cockpit Procedures (Flight Simulator)	SOES
3-5	Flight Training	SOES

502. INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1	Flight Training	SOES

510. GROUND TRAINING

511. COURSE OF INSTRUCTION

Simulator Instruction	Flight Safety Intl.

512. FLIGHT SIMULATOR TRAINING

TRAINER	EVENTS	HOURS
Familiarization	3	12

513. SQUADRON LEVEL TRAINING

Orientation
Local Course Rules
Preflight Inspection
Cockpit Familiarization and Coordination
Start Taxi/Shutdown Procedures
Thrust Reverser Operation/Takeoff Aborts
Preflight Inspection
Operation of Flight Director/COM/NAV Equipment
Instrument Systems and Malfunctions
NATOPS Open/Close Book Exams

520. FLIGHT TRAINING

521. BASIC, TRANSITION, CONVERSATION AND REFRESHER PILOT

1. Mission Capable Training

STAGE	SORTIES	HOURS	PERCENT
Basic Qualification	3	12.0	25.0
Familiarization and Instruments.	4	8.0	20.0
Night Familiarization	1	2.0	5.0
Copilot Familiarization	1	2.0	4.0
Copilot Check (NATOPS Check Flight)	1	2.0	6.0
Total	**10**	**26.0**	**60.0**

2. Mission Ready Training

STAGE	SORTIES	HOURS	PERCENT
Copilot Review	1	2.0	4.0
Copilot Check	1	2.0	6.0
Total	**2**	**4.0**	**10.0**

3. Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
TPC Route Check	2	4.0	10.0
TPC Review	1	2.0	5.0
Total	**3**	**6.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
TPC Check Flight	1	2.0	15.0
Total for Basic, Transition, Conversion and Refresher Pilot	**16**	**38.0**	**100.0**

522. INSTRUCTOR UNDER TRAINING

STAGE	SORTIES	HOURS
Familiarization	1	2.0
IUT Check Flight	1	2.0
Total for IUT	**2**	**4.0**

530. SIMULATOR TRAINING

1. Purpose. To familiarize all pilots with the CT-39 normal cockpit procedures, crew coordination, systems operation and limitations, emergency procedures and to introduce instrument flight procedures.

SFAM/INST-100 3.0 2F5

Goal. Normal procedures introduction.

Requirement. Preflight briefing and completion of TOLD card. Cockpit orientation, using GPU for start. Takeoff checks, normal takeoff and climb to altitude. Steep turns, approached

to stalls and unusual attitudes, fuel systems management, electrical problems. Normal descent, turbulence penetration and ice protection management. VOR/DME holding and approaches, normal landings. Debriefing.

SFAM/INST-101 3.0 2F5

Goal. Introduce emergency procedures.

Requirement. Battery start and start malfunction, Takeoff, engine failure at Vr. Single engine ILS approach and landing above landing weight limits. Engine failure between V1 and Vr single engine climb, normal relight. Climb to altitude, maximum cruise speed. Review turbulence penetration. Inverter failures flight instrument failures, cabin pressure failure, emergency descent. Arrival clearance. ADF approach, missed approach, with runaway horizontal stabilizer. Circle for landing and engine fire during landing roll. Debriefing.

SFAM/INST-102 3.0 2F5

Goal. Continue emergency procedures responses and approaches.

Requirement. Battery start (hot start). Aborted takeoff engine fire before V1. Takeoff from high altitude airport, 6,000 feet, and noise abatement procedures with departure clearance, climb to FL390. Review system malfunction. Long range cruise procedures at FL390. Aft fuselage overheat and emergency descent to 5,000 feet AGL. VOR holding, generator failure, ILS approach to minimums. Flight director computer failed. Missed approach. Proceed to alternate (100 miles en route). Turbine overheat and loss of remaining generator. Double generator failure and systems lost. Single engine ILS and landing. Debriefing.

540. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. The time required to train a CT-39 pilot from transport third pilot (T3P) to transport plane commander (TPC) will vary depending on previous pilot experience. Training beyond T3P is usually accomplished in conjunction with operational flights.

2. Minimum crew shall consist of an instructor pilot (IP), pilot under instructor (PUI) and crew chief (CC) for all training in this syllabus.

3. Pilots under instruction will be in the left seat for all flights unless otherwise noted in the syllabus.

541. MISSION CAPABLE TRAINING

1. Familiarization and Instruments

a. Purpose. To instruct in aircraft ground handling, VFR and IFR flight characteristics and limitations with emphasis on instrument flight procedures and proper response to aircraft emergency situations.

b. Flight Training (4 Sorties, 8.0 Hours)

FAM/INST-100 2.0 T,C,R 1 A/C

Goal. Introduce CT-39 .

Requirement. Brief control of aircraft, control during actual emergency, use of checklist, external and internal preflight. Introduce takeoff data card computations and airspeed bug settings, takeoff sequence and procedures including required crew items. Review engine start procedures, taxi, runup, abort takeoff, normal takeoff and basic airwork. Introduce VOR/TACAN positioning, holding and approach utilizing flight director. Conduct touch-and-go landings and normal full stop landing with thrust reversers.

FAM/INST-101 2.0 T,C,R 1 A/C

Goal. Introduce expanded flight envelope maneuvers and continue approach practice.

Requirement. Review items covered during FAM/INST-100 emphasis on using flight director. Demonstrate and introduce stick shaker (clean and landing configuration). Introduce emergency descent and when one would be used. Continue practice approaches, touch-and-go landings and normal full stop landing with full thrust reversers.

FAM/INST-102 2.0 T,C,R 1 A/C

Goal. Review items covered on FAM/INST-100/101

Requirement. PUI complete takeoff data card, to include critical field length computations. Brief loss of engine on takeoff (single engine loss during climb 500 feet AGL or above), and VIP briefings/procedures. Introduce ILS approaches utilizing flight director and autopilot. Practice front course/backcourse approaches. Demonstrate short field approach to full stop landing. Practice single engine pattern to single thrust reverser full stop. Full stop landing using emergency brakes without thrust reversers.

FAM/INST-103 2.0 T,C,R 1 A/C

Goal. Review emergency procedures and instrument approaches.

Requirement. Review FAM/INST-100 through FAM/INST-102. Brief takeoff and landing emergencies. Fuel system malfunctions, engine oil system failure, electrical system failure and auto-pilot system malfunctions. Continue practice approaches including raw data front course/back course approach. Continue practice landings with/without thrust reversers.

2. Night Familiarization

a. Purpose. To become proficient in night operations and in handling emergencies at night.

b. Flight Training (1 Sortie, 2.0 Hours)

NFAM-110 2.0 T,C,R 1 A/C N

Goal. Review familiarization maneuvers at night.

Requirement. Brief all normal and emergency lighting available, loss of AC and DC electrical power. Practice instrument approaches and holding and touch-and-go landings as necessary.

3. Copilot Familiarization

a. Purpose. To instruct the PUI in the responsibilities and functions of the pilot flying from the right seat.

b. Flight Training (1 Sortie, 2.0 Hours)

FAM-120 2.0 T,C,R 1 A/C

Goal. Introduce copilot responsibilities to PUI.

Requirement. PUI in right seat to perform duties of copilot; includes proper response to indicate emergencies; proper radio procedures, right seat instrument approaches and landings. Demonstrate ability to make normal full stop landing and taxi from the runway.

4. Copilot Check (NATOPS Check Flight)

a. Purpose. To qualify the PUI as copilot (T3P) for operational flights in the CT-39 aircraft.

b. Flight Training (1 Sortie, 2.0 Hours)

T3P CHK-130 2.0 T,C,R 1 A/C

Goal. Evaluate the copilot's performance as a T3P.

Requirement. PUI to demonstrate the ability to meet NATOPS qualification per NATOPS evaluation criteria. The flight evaluation is designed to measure, with the maximum objectivity, the degree of standardization demonstrated by the PUI to ensure safety of flight. Prerequisite: NATOPS open and close book examinations.

542. MISSION READY TRAINING

1. Copilot Review

a. Purpose. To prepare T3P copilot for qualification as a T2P copilot.

b. Flight Training (1 Sortie, 2.0 Hours)

FAM/INST-200 2.0 T,C,R 1 A/C

Goal. Review and perform emergency procedures and check pilot reactions in abnormal flight situations.

Requirement. T3P in right seat to perform duties of copilot (T2P). Review preflight/start/taxi crew briefing and items

covered on previous flights. Emphasize emergency procedures and abnormal situations. Crew T3P/IP/CC

2. Copilot Check (T2P)

a. Purpose. To ensure adequate progress toward upgrade to TPC and qualify the T3P as a T2P for operational flights in the CT-39.

b. Flight Training (1 Sortie, 2.0)

T2P CHK-210 2.0 T,C,R E 1 A/C

Goal. T2P evaluation.

Requirement. T3P will demonstrate the ability to meet the NATOPS evaluation criteria. Check ride is designed to measure the ability of the T3P to handle the aircraft under normal and abnormal circumstances. Crew: T3P/IP/CC. Perquisite: NATOPS open and close book examinations.

543. MISSION QUALIFICATION TRAINING

1. TPC Route Check

a. Purpose. To conduct a route check flight prior to upgrade to TPC.

b. Flight Training (1 Sortie, 4.0 Hours)

FAM/INST-300 4.0 T,C,R 1 A/C

Goal. Extending operations procedures review.

Requirement. T2P will demonstrate the ability to manage a crew and aircraft away from home station. Flight must include a RON. Crew: T2P/IP/CC.

2. TPC REVIEW

a. Flight Training (1 Sortie, 2.0 Hours)

TPC-310 2.0 T,C,R 1 A/C

Goal. Review all previous instructions.

Requirement. Review all CT-39 procedures, normal and emergency. Demonstrate ability to lead and coordinate crew actions during emergencies. Crew: T2P/IP/CC.

544. FULL-MISSION QUALIFICATION TRAINING

1. Purpose. To upgrade T2P pilot to transport plane commander.

2. Flight Training (1 Sortie, 2.0 Hours)

TPC CHK-400 2.0 T,C,R E 1 A/C

Goal. Transport plane commander check.

Requirement. T2P to demonstrate ability to meet NATOPS evaluation criteria for TPC. Flight designed to measure with maximum objectivity, the knowledge and abilities of the T2P. Crew: T2P/IP/CC. Perquisite: NATOPS open and close book examinations.

550. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

551. INSTRUCTOR UNDER TRAINING

a. Purpose. To standardize pilots in procedures for the CT-39 aircraft.

b. Flight Training (1 Sortie, 2.0 Hours)

FAM-500	2.0	1 A/C

Goal. Introduce FAM/INST maneuvers instruction techniques.

Requirement. IUT in right seat will practice all maneuvers introduced in previous instruction, demonstrate ability to perform all maneuvers in a standard manner, and to recognize and correct common student errors. Crew: IUT/IP/CC

2. IUT Check Flight

a. Purpose. To qualify IUT as an instructor pilot for the CT-39 aircraft.

b. Flight Training (1 Sortie, 2.0 Hours)

IUT CHK-510	2.0	1 A/C

Goal. Demonstrate instructional capability.

Requirement. IUT in right seat will review items covered in FAM-500 and demonstrate the requisite instructional ability and standardization expected of an instructor pilot. Crew: IUT/IP/CC. Prerequisite: NATOPS open and closed book examinations.

560. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: CT-39 MOS: 7559 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM/INST	100	2.0	*	5.0	X	X	X		
	101	2.0	*	5.0	X	X	X		
	102	2.0	*	5.0	X	X	X		
	103	2.0	*	5.0	X	X	X		
NFAM	110	2.0	*	5.0	X	X	X		
FAM	120	2.0	*	4.0	X	X	X		
T3P CHK	130	2.0	*	6.0	X	X	X		
MISSION READY TRAINING									
FAM/INST	200	2.0	*	4.0	X	X	X		
T2P CHK	210	2.0	C	6.0	X	X	X	X	
MISSION QUALIFICATION TRAINING									
FAM/INST	300	4.0	C	10.0	X	X	X		
TPC	310	2.0	*	5.0	X	X	X		
FULL-MISSION QUALIFICATION TRAINING									
TPC CHK	400	2.0	C	15.0	X	X	X	X	
INSTRUCTOR UNDER TRAINING									
FAM CHK	500	2.0	*		X	X	X		
IUT CHK	510	2.0	*		X	X	X		

Figure 5-1.--MOS 7559 Refly Interval, Mission Readiness Percentage.

PILOT FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
FAM/INST	200	
T2P CHK	210	200
FAM/INST	300	200,210
TPC	310	200,210
TPC CHK	400	200,210,310

Figure 5-2.--MOS 7559 Flight Update Chaining.

CHAPTER 6

CT-39 CREW CHIEF

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 6

CT-39 CREW CHIEF

600. PROGRAMS OF INSTRUCTION

601. BASIC, TRANSITION, CONVERSION, AND REFRESHER CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1-4	Ground Training	MCAS
5-12	Flight Training	MCAS

610. GROUND TRAINING

611. COURSE OF INSTRUCTION

COURSE	ACTIVITY
Simulator Instruction	Flight Safety Intl.

612. FLIGHT SIMULATOR TRAINING

TRAINER	EVENTS	HOURS
Familiarization	4	20.0

613. SQUADRON LEVEL TRAINING

Orientation
Local Course Rules/Exams (NATOPS)
Preflight Inspection/Servicing
Cockpit FAM/PAX Brief
Auxiliary Power Unit Operation
Emergency Procedures
Weight and Balance
NATOPS Open/Close Book Examinations

620. FLIGHT TRAINING

621. BASIC, TRANSITION, CONVERSION AND REFRESHER CREW CHIEF

1. Mission Capable Training

STAGE	SORTIES	HOURS	PERCENT
Simulator Training (Optional)	4	20.0	25.0
Familiarization	10	15.0	35.0
Total	**14**	**35.0**	**60.0**

2. Mission Ready Training

STAGE	SORTIES	HOURS	PERCENT
Familiarization	8	12.0	10.0

3. Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
Crew Chief Review	8	12.0	15.0

4. Full-Mission Qualification Training

STAGE	SORTIES	HOURS	PERCENT
NATOPS Check Flight	3	4.5	15.0
Total	**33**	**63.5**	**100.0**

630. SIMULATOR TRAINING (OPTIONAL). To familiarize all crew chiefs with the CT-39 normal cockpit procedures, crew coordination, systems operations and limitations, emergency procedures and to introduce instrument flight procedures and VFR scan patterns. Flights duplicate those outlined in CT-39 pilot simulator training.

SFAM/INST-100 3.0 2F5

Goal. Normal procedures introduction.

Requirement. Preflight briefing and completion of TOLD card. Cockpit orientation, using GPU for start. Takeoff checks, normal takeoff and climb to altitude. Steep turns, approached to stalls and unusual attitudes, fuel systems management, electrical problems. Normal descent, turbulence penetration and ice protection management. VOR/DME holding and approaches, normal landings. Debriefing.

SFAM/INST-101 3.0 2F5

Goal. Introduce emergency procedures.

Requirement. Battery start and start malfunction, takeoff, engine failure at Vr. Single engine ILS approach and landing above landing weight limits. Engine failure between V1 and Vr single engine climb, normal relight. Climb to altitude, maximum cruise speed. Review turbulence penetration. Inverter failures flight instrument failures, cabin pressure failure, emergency descent. Arrival clearance. ADF approach, missed approach, with runaway horizontal stabilizer. Circle for landing and engine fire during landing roll. Debriefing.

SFAM/INST-102 3.0 2F5

Goal. Continue emergency procedures responses and approaches.

Requirement. Battery start (hot start). Aborted takeoff engine fire before V1. Takeoff from high altitude airport,

6,000 feet, and noise abatement procedures with departure clearence, climb to FL390. Review system malfunction. Long range cruise procedures at FL390. Aft fuselage overheat and emergency descent to 5,000 feet AGL. VOR holding, generator failure, ILS approach to minimums. Flight director computer failed. Missed approach. Proceed to alternate (100 miles en route). Turbine overheat and loss of remaining generator. Double generator failure and systems lost. Single engine ILS and landing. Debriefing.

640. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General. The time required to train a CT-39 crew chief will vary depending on previous experience. All training will be conducted in conjunction with operational flights, test flights, and/or pilot training flights.

2. Prerequisite. Minimum crew will consist of a transport plane commander, copilot, crew chief instructor (CCI), and crew chief under instruction (CCUI).

641. MISSION CAPABLE TRAINING

1. Purpose. To familiarize the CCUI with the CT-39 aircraft. Instruction will emphasize adherence to NATOPS procedures, operation of aircraft systems, and aircraft servicing.

2. Flight Training (10 Sorties, 15.0 Hours)

FAM-100 1.5 T,C,R 1 A/C

Goal. Sabreliner introduction.

Requirement. CCUI is to conduct a thorough preflight under supervision. He should gain a thorough understanding of engine starting, performance during takeoff, cruise, descent, landing and shutdown. CCUI conducts postflight inspection, cleaning and servicing of the aircraft. Crew: TPC/CP/CCI/CCUI.

FAM-101 1.5 T,C,R 1 A/C

Goal. Review previous instruction and introduce fuel system. Crew: TPC/CP/CCI/CCUI.

FAM-102 1.5 T,C,R 1 A/C

Goal. Review previous instruction and introduce DC electrical system. Crew: TCP/CP/CCI/CCUI.

FAM-103 1.5 T,C,R 1 A/C

Goal. Review all previous instruction and introduce AC electrical system. Crew: TCP/CP/CCI/CCUI.

FAM-104 1.5 T,C,R 1 A/C

Goal. Introduce main hydraulic system and review previous instruction. Crew: TCP/CP/CCI/CCUI.

FAM-105 1.5 T,C,R 1 A/C

Goal. Introduce auxiliary hydraulic system and previous instruction as necessary. Crew: TPC/CP/CCI/CCUI.

FAM-106 1.5 T,C,R 1 A/C

Goal. Review previous instruction and introduce the oxygen system. Crew: TCP/CP/CCI/CCUI.

FAM-107 1.5 T,C,R 1 A/C

Goal. Review all previous instruction and introduce the fire warning system. Crew: TCP/CP/CCI/CCUI.

FAM-108 1.5 T,C,R 1 A/C

Goal. Introduce pressurization system and review previous instruction. Crew: TCP/CP/CCI/CCUI.

FAM-109 1.5 T,C,R 1 A/C

Goal. Review all systems. Crew: TCP/CP/CCI/CCUI.

642. MISSION READY TRAINING

1. Purpose. To instruct the CCUI on the CT-39 in-flight procedures, limitations, forms, flight publications and emergency procedures.

2. Flight Training (8 Sorties, 12.0 Hours)

FAM-200 1.5 T,C,R 1 A/C

Goal. Introduce engine limitations. Crew: TCP/CP/CCI/CCUI.

FAM-201 1.5 T,C,R 1 A/C

Goal. CCUI will demonstrate a knowledge of all flight limitations. Crew: TCP/CP/CCI/CCUI.

FAM-202 1.5 T,C,R 1 A/C

Goal. CCUI will demonstrate proficiency in the hydraulic system limitations. Crew: TCP/CP/CCI/CCUI.

FAM-203 1.5 T,C,R 1 A/C

Goal. Review FAM-200 through FAM-202. Crew: TCP/CP/CCI/CCUI.

FAM-204 1.5 T,C,R 1 A/C

Goal. Review all previous instruction. Emphasize emergency procedures. Crew: TCP/CP/CCI/CCUI.

FAM-205 1.5 T,C,R 1 A/C

Goal. Review all previous instruction. Emphasize all previous instruction. Crew: TCP/CP/CCI/CCUI.

FAM-206 1.5 T,C,R 1 A/C

Goal. Review emergency procedures (all types). CCUI will demonstrate a capability to maintain all logs and complete all flight forms. Crew: TCP/CP/CCI/CCUI.

FAM-207 1.5 T,C,R 1 A/C

Goal. Trainee will be familiarized in the use of all flight publications used in the CT-39. Crew: TCP/CP/CCI/CCUI.

643. MISSION QUALIFICATION TRAINING

1. Purpose. To review all 100 and 200 series sorties leading to a turnup license and a NATOPS check.

2. Flight Training (8 Sortie, 12.0 Hours)

FAM-300-306 1.5 T,C,R 1 A/C

Goal. Review all 100 and 200 series sorties leading to a NATOPS check. Crew: TCP/CP/CCI/CCUI.

FAM-307 2.0 T,C,R 1 A/C

Goal. Turnup procedures.

Requirement. CCUI will receive instructions on aircraft turnup procedures. The first turnup will be demonstrated by a qualified NATOPS evaluation chief. Turnup numbers two through four will be performed by the CCUI and turnup number five will be the qualification turnup. Crew: TCP/CP/CCI/CCUI.

644. FULL-MISSION QUALIFICATION TRAINING

1. Purpose. To review all material covered to date. CCUI will demonstrate the ability to meet NATOPS evaluation criteria for crew chief.

2. Flight Training (3 Sortie, 4.5 Hours)

FAM-400 1.5 T,C,R 1 A/C

Goal. Review all phases of training. Crew: TCP/CP/CCI/CCUI.

FAM-401 1.5 T,C,R 1 A/C

Goal. NATOPS check flight. Crew: TCP/CP/CCI/CCUI.

FAM-400 1.5 T,C,R E 1 A/C

Goal. To evaluate the CCUI's qualification to become a designated CT-39 crew chief. Crew: TCP/CP/CCI/CCUI.

Prerequisite. NATOPS open and closed book examinations.

650. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

Reserved for future use.

660. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: CT-39 MOS: 60XX CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	1.5	*	3.5	X	X	X		
	101	1.5	*	3.5	X	X	X		
	102	1.5	*	3.5	X	X	X		
	103	1.5	*	3.5	X	X	X		
	104	1.5	*	3.5	X	X	X		
	105	1.5	*	3.5	X	X	X		
	106	1.5	*	3.5	X	X	X		
	107	1.5	*	3.5	X	X	X		
	108	1.5	*	3.5	X	X	X		
	109	1.5	*	3.5	X	X	X		
MISSION READY TRAINING									
FAM	200	1.5	6	1.25	X	X	X		
	201	1.5	6	1.25	X	X	X		
	202	1.5	6	1.25	X	X	X		
	203	1.5	6	1.25	X	X	X		
	204	1.5	6	1.25	X	X	X		
	205	1.5	6	1.25	X	X	X		
	206	1.5	6	1.25	X	X	X		
	207	1.5	6	1.25	X	X	X		
MISSION QUALIFICATION TRAINING									
FAM	300	1.5	6	1.5	X	X	X		
	301	1.5	6	1.5	X	X	X		
	302	1.5	6	1.5	X	X	X		
	303	1.5	6	1.5	X	X	X		
	304	1.5	6	1.5	X	X	X		
	305	1.5	6	1.5	X	X	X		
	306	1.5	6	1.5	X	X	X		
	307	1.5	6	4.5	X	X	X		
FULL-MISSION QUALIFICATION TRAINING									
FAM	400	1.5	6	5.0	X	X	X		
	401	1.5	C	5.0	X	X	X	E	
	402	1.5	C	5.0	X	X	X	E	

Figure 6-1.--MOS 60XX Refly Interval, Mission Readiness Percentage.

CREW CHIEF FLIGHT UPDATE CHAINING

FLIGHT	FLIGHTS UPDATED
200	
201	200
202	200, 201
203	200, 201, 202
204	200, 201, 202, 203
205	200, 201, 202, 203, 204
206	200, 201, 202, 203, 204, 205
207	200, 201, 202, 203, 204, 205, 206
208	200, 201, 202, 203, 204, 205, 206, 207
209	200, 201, 202, 203, 204, 205, 206, 207, 208
300	200, 201, 202, 203, 204, 205, 206, 207, 208, 209
301	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300
302	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301
303	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302
304	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303
305	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 304
306	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 304, 305
307	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 304, 305, 306
400	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 304, 305, 306, 307
401	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 304, 305, 306, 307, 400
402	200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 300, 301, 302, 303, 304, 305, 306, 307, 400, 401

Figure 6-2.--MOS 60XX Flight Update Chaining.

CHAPTER 7

UC-12 PILOT AND QUALIFIED OBSERVER (QO)

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 7

UC-12 PILOT AND QUALIFIED OBSERVER (QO)

700. PROGRAMS OF INSTRUCTION FOR TRANSITION, CONVERSION, AND REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground Training	FRS/CGS*
2-6	Flight Training	FRS/MCAS

* Contracted Ground School

701. POI FOR TRANSITION, CONVERSION, AND REFRESHER QO

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground Training	FRS
2-4	Flight Training	FRS/MCAS

710. GROUND TRAINING COURSES OF INSTRUCTION. UC-12 Ground School will be conducted at the Navy FRS/civilian-contracted initial training site according to the UC-12 NATOPS Manual. This course of instruction shall be completed prior to commencing flight training.

711. SQUADRON LEVEL TRAINING

Aircraft Systems
Normal Procedures
Emergency Procedures and Equipment*
Aircraft Limitations
Weight and Balance
Preflight/Postflight Inspection and Flightline Operations
Communications/Navigation
All Weather Operations
Aircraft Flight Characteristics
Passenger Briefing/Loading/Offloading
Performance Data and Mission Planning
Local Course Rules/Exam
Aircrew Coordination Training and Responsibilities
Navigation Computer
Weather Radar
NATOPS Open and Closed Book Examinations

NOTE: * Emergency procedures instruction shall include: egress, escape hatch, life raft positioning responsibility, fire extinguishers and emergency radio.

720. FLIGHT TRAINING FOR TRANSITION AND CONVERSION PILOT

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	25.0
Familiarization	5	11.5	20.0

Instruments	3	6.5	15.0
Total	**8**	**18.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Navigation	**1**	**3.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
T2P Check	**1**	**2.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
TPC Familiarization	1	2.0	7.5 TPC Check
	1	2.5	7.5**Total**
	2	**4.5**	**15.0**
Total for Transition and Conversion Pilot Training	**12**	**28.0***	**100.0**

NOTE: * Augmented with other training/mission flight hours to total 100 prior to the TPC check. Waivers will be per the UC-12 NATOPS Manual.

721. REFRESHER PILOT TRAINING

STAGE	FLIGHTS	HOURS
Familiarization	2	5.0
Instruments/Navigation	2	5.0
Standardization Check	2	4.5
Total for Refresher Pilot Training	**6**	**14.5**

722. INSTRUCTOR UNDER TRAINING (IUT) PILOT

STAGE	FLIGHTS	HOURS
Familiarization	2	4.0
Instruments/Navigation	2	4.0
Standardization Check	1	2.5
Total for IUT Pilot Training	**5**	**10.5**

723. TRANSITION, CONVERSION, AND REFRESHER QO

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	25.0
Familiarization	2	4.0	35.0
Total	**2**	**4.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Instruments	**1**	**2.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Navigation	**1**	**2.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
QO Check	**1**	**2.0**	**15.0**
Total for Transition, Conversion and Refresher Qualified Observer Training	**5**	**10.0**	**100.0**

730. SIMULATOR TRAINING. Utilize civilian-contracted UC-12 ground simulator to conduct normal and emergency procedures training per NATOPS. Civilian-contracted UC-12 ground/flight simulator training is not authorized for the qualified observer. Approved simulator training is listed in the FRS syllabus guide.

740. FLIGHT PERFORMANCE REQUIREMENTS

1. Crew positions are indicated in each flight/stage description; e.g., PUI/IP (pilot under instruction in left seat, instructor pilot in right seat).

2. The minimum crew shall consist of an instructor pilot and a pilot under instruction (PUI) for all training flights.

3. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

741. MISSION CAPABLE TRAINING, PILOT

1. Familiarization

a. Purpose. To learn normal and emergency procedures for the aircraft. On all training fights, crew responsibilities and coordination shall be stressed.

b. Flight Training (6 Flights, 11.5 Hours)

FAM-100 0.0 T,C 1 ACFT

Goal. Introduce normal UC-12 ground procedures.

Requirement. Preflight briefing to include start procedures, run-up procedures, and takeoff brief. Demonstrate aircraft discrepancy book, yellow sheet, weight and balance, performance

data, preflight, start procedures, auto-pilot check, run-up procedures, abort, and post-flight. Introduce preflight, checklist utilization, crew coordination, and secure procedures.

FAM-101 2.5 T,C 1 ACFT

Goal. Introduce normal UC-12 procedures.

Requirement. Preflight briefing to include abnormal start, emergency engine shutdown on deck, aborted takeoff, emergency equipment, emergency egress, engine failure after Vr, ditching procedures (SSE, dual engine on/off), and touch and go procedures. Demonstrate aircraft inspection, engine starting procedures, engine runup procedures, ditch (2 engine on), engine shutdown procedure (inflight), airstart procedure (starter assist), Simulated Single Engine (SSE) pattern, SSE landing, SSE wave-off, and abort. Demonstrate then introduce stalls and stall recovery procedures. Introduce cockpit/crew coordination, operating limits (engine), takeoff/departure, turn pattern, slow flight, normal landing pattern, approach flap landing, full flap landing, no flap landing, wave-off (2 engine), and full stop reverse landing. Practice taxiing, BAW. Review headwork.

FAM-102 2.5 T,C,R 1 ACFT

Goal. Introduce emergency procedures.

Requirement. Preflight briefing to include GPU start procedures, jammed flight controls, single engine ditching, door open light (in flight), oxygen system, runaway torque on deck, fire detection/extinguisher system, engine fire on deck, loss of brakes, flap system failure, and electrical system malfunction. Demonstrate SSE After Takeoff (ATO) (no rudder boost/at altitude), airstart (windmilling), and SSE ditch. Introduce aircraft inspection, engine start procedures, engine run-up procedures, jammed flight controls, engine shutdown procedures, airstart procedures, SSE pattern, SSE landing, SSE wave-off, emergency checklists, engine fire inflight, electrical fire, and abort. Practice turn pattern, slow flight, stalls/recoveries, takeoff/departure, landing pattern (normal), approach flap landing, full flap landing, no flap landing wave-off (2 engine), full stop/reverse landing, BAW, and taxiing. Review previous emergencies and headwork.

FAM-103 2.5 T,C,R 1 ACFT

Goal. Continue emergency procedures application.

Requirement. Preflight briefing to include servicing/securing, runaway torque after Vr, electric trim failure, engine failure (2nd engine), inflight fires, landing gear emergencies, propeller failure/overspeed, fuel system emergencies, A/C operating limits (airframe), forced landing (no power), and pressurization failures. Introduce emergency descent, air-start (windmilling), dual engine failure, propeller malfunctions, ditch (2 engine out), SSE ATO (no rudder boost), SSE wave-off (no rudder boost), and engine fire on deck. Practice stall recoveries, aircraft inspection, engine start

procedures, engine runup procedures, engine shutdown procedures, normal landing pattern, approach flap landings, full flap landings, SSE landing pattern, SSE after takeoff, SSE cross wind, SSE down wind, SSE base, SSE final, SSE wave-off, BAW, and abort. Review previous emergencies and headwork.

FAM-104 2.0 T,C 1 ACFT

Goal. Practice and review previous FAM instruction.

Requirement. Preflight briefing to include hot brakes, single-engine taxi, smoke and fume elimination, oil system emergencies, anti-ice/de-ice failure, flight control malfunction, ice-vane failure, environmental system failure, cracked windshield, and excessive load meter reading. Introduce electrical system malfunction, propeller failure/ overspeed, aircraft fire, runaway torque (inflight), right hand landing pattern, SSE reverse landing, and landing gear alternate extensions. Practice aircraft inspection, engine start procedures, engine runup procedures, engine shutdown procedures, engine restart procedures, normal landing pattern, SSE landing pattern, normal landings, SSE landings, wave-off (1 - 2 engine), abort, stall recoveries, ditch, SSE ATO (no rudder boost), and BAW. Demonstrate VMC maneuver. Review previous emergencies and headwork.

FAM-120 2.0 T,C 1 ACFT N

Goal. Night familiarization introduction.

Requirement. Preflight briefing to include fuel system emergencies, duct overtemp, alternate air source, tripped feeder circuit breaker (C/B), C/B reset procedures, aircraft lighting, night flying procedures, and no landing/taxi light landing. Introduce night landing pattern. Practice normal landings, SSE landings, waveoff (1 - 2 engine), aircraft inspection, engine start procedures, engine runup procedures, secure procedures, and BAW. Review previous emergencies and headwork.

2. Instruments

a. Purpose. To acquaint the PUI with the flight characteristics, navigation equipment, and flight instruments under simulated or actual instrument flying conditions.

b. General. Approaches should terminate in touch-and-go landings if possible, emphasizing missed approach point decision making to either a normal landing or missed approach.

c. Flight Training (3 Flights, 6.5 Hours)

INST-110 2.5 T,C 1 ACFT (N)

Goal. Introduce UC-12 instrument procedures and nonprecision capabilities.

Requirement. Preflight briefing to include NATOPS section six nonprecision procedures, VOR procedures, ADF procedures, BC procedures, LOC procedures, ASR procedures, TACAN procedures,

nonprecision SSE procedures, autopilot/Flight Director Indicator (FDI)/Horizontal Situation Indicator (HSI) utilization, enroute/cruise procedures, autopilot emergency disengage, electric elevator trim failure, autopilot trim failure light, and copilot utilization/duties. Introduce instrument departure, VOR approach, ADF approach, TACAN approach, LOC/BC approach, ASR approach, SSE approaches, SSE missed approach, circling approach, holding, and copilot utilization. Practice normal landings, SSE landings, BAW, full stop/reverse, aircraft inspection, engine starting, and engine runup, secure procedures. Review previous emergencies and headwork.

INST-111 2.0 T,C 1 ACFT (N)

Goal. Review UC-12 instrument procedures and introduce precision approaches.

Requirement. Preflight brief to include NATOPS section six precision approach procedures, ILS procedures, GCA procedures, lost communication, fuel system failures, coupled approach, NAVAID failures, bleed air failure, excessive differential PSI, loss of pressurization, and explosive decompression. Introduce ILS, GCA, SSE ILS, and SSE GCA. Practice instrument departure, enroute procedures, missed approach, normal landings, SSE landings, BAW, copilot utilization, aircraft inspection, engine starting, engine run-up, and secure procedures. Review non-precision procedures, previous emergencies and headwork.

INST-112 2.0 T,C,R 1 ACFT (N)

Goal. Demonstrate instrument proficiency in the UC-12.

Requirement. Preflight briefings to include severe weather procedures, flight planning, boost pump failure, tire failure, engine driven fuel pump failure, cracked windshield/cabin window, passenger oxygen utilization, and fuel planning/log. Practice instrument departure, enroute procedures, holding, VOR/ADF approach, TACAN approach, LOC/BC approach, ILS approach, GCA/ASR approach, circling approach, SSE approach, missed approach, BAW, normal landings, SSE landings, copilot utilization, aircraft inspection, engine starting, and engine runup. Review headwork.

742. MISSION CAPABLE TRAINING, QO

1. Purpose. To introduce normal and emergency procedures for the UC-12. On all training flights, crew responsibilities and coordination shall be stressed. Crew positions for each flight/stage are IP in the left seat and QO in the right seat.

2. Flight Training (3 Flight, 6.0 Hours)

FAM-100 0.0 T,C,R 1 ACFT

Goal. UC-12 introduction.

Requirement. Brief flight planning, weight and balance, passenger/cargo loading, takeoff/performance data, checklists

(practice with IP), crew coordination, voice procedures and radio calls, and emergency and survival equipment. Demonstrate aircraft preflight, start, run-up, taxi, aborted takeoff, and normal shutdown.

FAM-101 2.0 T,C,R 1 ACFT

Goal. Introduction to normal UC-12 procedures.

Requirement. Brief preflight/flight planning, aircrew coordination/voice calls, checklists, normal start procedures, abnormal starts, engine fire on deck, aborted takeoff, runaway torque on deck/in flight, emergency egress, taxiing, run-up (procedure & limits), takeoff, touch-and-go procedures, fuel system & emergencies, landing gear system and emergencies, and critical memory items. Review preflight. Introduce checklists, communication procedures and equipment, demonstrate starting engines, taxi and engine runup, normal takeoff, aborted takeoff, climb schedule (charts), normal cruise, slow flight, steep turns, approach to stall/full stalls, unusual attitudes, oxygen system, environmental control, and postflight. Demonstrate landings (full flap, approach flap, no flap and with reverse), engine failure in flight and emergency engine shutdown, starter assisted airstart, and waveoff. Debrief.

FAM-102 2.0 T,C,R 1 ACFT

Goal. Review normal procedures and introduce additional emergency procedures.

Requirement. Brief GPU starts, autopilot/flight director setup, engine fire on deck and in flight, electrical system, current limiter checks-inflight, flight controls, runaway torque on takeoff and in flight, oil system and failures, jammed controls on deck, open door light in flight, and fuel cross feeding operations. Review preflight checklists, engine start normal & abnormal, taxi & runup, abort, normal takeoff, climb, cruise, engine shutdown, postflight, and yellow sheet. Introduce jammed controls on deck, autopilot/flight director use, engine shutdown & restart, engine failures after takeoff and enroute, dual engine failure, windmilling airstart, pressurization loss (explosive and gradual), ditching (two engine, single engine and no engines), engine fire in flight, electrical fire, inverter failure, generator failure, and smoke and fumes elimination. Demonstrate normal pattern, landings full flap, approach flap, and no flap & simulated single engine. Debrief.

743. MISSION READY TRAINING, PILOT

1. Purpose. To acquaint the PUI with the UC-12 navigation equipment, performance data and unfamiliar airport operating procedures.

2. Flight Training (1 Flight, 3.0 Hours)

NAV-200 3.0 T,C,R 1 ACFT (N)

Goal. Introduce copilot duties and demonstrate right seat operations to include unfamiliar airport operating procedures.

Requirement. Preflight briefing to include NATOPS section three, copilot duties, arrival transition, anti-ice/de-ice system, severe weather procedures, radar utilization, omega, HF procedures, and filing in-flight. Introduce copilot responsibilities, log keeping (fuel), right seat approach, right seat landing, and omega/HF procedures. Practice voice procedures, checklist utilization, secure procedures, and BAW. Review headwork.

744. MISSION READY TRAINING, QO

1. Purpose. To acquaint the QOUI with the navigation equipment available in the UC-12.

2. Flight Training (1 Flight, 2.0 Hours)

INST-200 2.0 T,C,R 1 ACFT (N)

Goal. Introduce UC-12 navigation equipment and nonprecision/ precision approach capabilities.

Requirement. Preflight briefing to include propeller system, bleed air system, explosive decompression, lost communications, fuselage fire, comm/nav radios, AP/FD use SID's & STAR's, enroute ATC procedures, instrument approach procedures straight in approaches and circling approaches, weather radar, severe weather procedures, and omega/long range nav systems. Review preflight, checklists, engine start hot start and no light-off, (taxi no brakes and hot brakes), abort, climb, cruise, engine shutdown, airstart, postflight, and yellow sheet. Introduce prop failure/overspeed, fuselage fire, engine chip light, fuel crossfeed after engine failure, manual gear extension, emergency descent, landings (two engine and single engine), instrument approaches straight in and circling, TACAN, VOR, LOC BC, NDB, ASR, ILS and PAR, missed approach (dual engine and single engine), holding, and omega/long range nav. Debrief.

745. MISSION QUALIFICATION TRAINING, PILOT

1. Purpose. To qualify the PUI for all operational flights in the UC-12 aircraft.

2. Flight Training (1 Flight, 2.5 Hours)

T2PCK-300 2.5 T,C,R E 1 ACFT

Goal. NATOPS evaluation to demonstrate proficiency to qualify as a T2P for operational flights.

Requirement. The PUI will demonstrate flight planning, crew/ pax briefing, aircraft inspection, safety/survival equipment, pre-start, start (normal/emergency), taxi procedures, before takeoff procedures, normal takeoff procedures, normal after

liftoff, climb and departure, level off and cruise, normal landing pattern, normal approach, approach flap landing, single engine approach, engine failure at Vr, single engine landing, no flap landing, full flap landing, waveoff (1 or 2 engine), engine fire on deck, engine fire in flight, propeller malfunctions, landing gear emergencies, brake malfunctions, loss of AC or DC power, electrical fire, smoke removal, loss of pressurization, emergency descent, ditching (1 or 2 engine), ice system malfunction, airstart procedures, flight control malfunction, holding procedure, bearing interception, approach airspeed control, TACAN procedures, ILS procedures, VOR procedures, ADF procedures, GCA procedures, missed approach procedures, checklist execution, engine operation, and post flight inspection.

Prerequisite. Completion of NATOPS Open and Closed Book examinations.

746. MISSION QUALIFICATION TRAINING, QO

1. Purpose. To introduce the QOUI to UC-12 enroute navigation procedures, performance data, and unfamiliar airport operating procedures.

2. Flight Training (1 Flight, 2.0 Hours)

NAV-300	2.0	T,C,R	1 ACFT N

Goal. Introduce UC-12 nonprecision/precision capabilities at night.

Requirement. Preflight brief to include autopilot/flight director use, aircraft lighting, emergency lights, pilot alternate static air source, electric ice vane failure, anti-ice/de-ice systems, electrical malfunctions, fuel planning/logs, loss of AC/DC power, and sub-panel feeder circuit breaker. Review preflight inspection, checklists, engine start and runup, takeoff and IFR departure, climb, cruise, holding procedures, approaches single and two engine, ILS/LOC, TACAN, PAR, VOR/ADF, missed approach, waveoff, engine shutdown after flight, night aircraft secure procedures, postflight, and yellow sheet. Demonstrate night pattern and night landings. Debrief.

747. FULL-MISSION QUALIFICATION TRAINING, PILOT

1. Transport Plane Commander (TPC) Familiarization

a. Purpose. To review all previously introduced instruction and to ensure that the T2P is adequately prepared for a TPC check.

b. Flight Training (1 Flight, 2.0 Hours)

TPC FAM-400	2.0	T,C	1 ACFT (N)

Goal. Review all previous UC-12 instruction.

Requirement. Discuss aircraft commander responsibilities. Review all UC-12 normal and emergency procedures. Demonstrate

the ability to lead and coordinate crew actions during normal and emergency situations. Crew: T2P/IP

2. TPC Check

a. Purpose. To upgrade a T2P to Transport Plane Commander (TPC).

b. Flight Training (1 Flight, 2.0 Hours)

TPC CK-410	2.0	T,C,R	E	1	ACFT

Goal. TPC evaluation flight.

Requirement. T2P shall demonstrate the ability to meet NATOPS qualification according to NATOPS evaluation criteria. The flight evaluation is designed to measure with maximum objectivity the degree of standardization demonstrated by the T2P and to ensure safety of flight. Discuss the responsibilities of flying with a Naval Flight Officer who is designated as a Qualified Observer. Crew: T2P/IP.

Prerequisite. Completion of NATOPS Open and Closed Book examinations.

748. FULL-MISSION QUALIFICATION TRAINING, QO

1. Purpose. To certify the naval flight officer for all mission requirements as a qualified observer, including the ability to plan, file, and load a mixed passenger and cargo logistics flight. Emphasis will be placed on the QOUI to assist the TPC in operating all systems under normal or simulated emergency conditions.

2. Flight Training (1 Flight, 2.0 Hours)

QOCK-400	2.0	T,C,R	E	1	ACFT

Goal. QO evaluation flight.

Requirement. Preflight briefing to include flight planning, weight and balance, fuel computations, and normal and emergency procedures. Demonstrate a thorough knowledge of the aircraft systems, the ability to perform the responsibilities of a qualified observer, and the ability to assist the TPC in all aircraft configurations under varying emergency and meteorological conditions.

Prerequisite. NATOPS Open and Closed Book examinations.

750. IUT PILOT PERFORMANCE REQUIREMENTS

1. Purpose. To standardize instructor pilot procedures for the UC-12 aircraft. The IUT in this stage will fly all events from the right seat.

2. Crew Requirement: NATOPS instructor/IUT (TPC minimum prerequisite).

3. Training (5 Flights, 10.5 Hours)

FAM-500	2.0	1	ACFT

Goal. IUT familiarization introduction.

Requirement. Brief instructional technique, systems knowledge, procedural knowledge, and time management. Flight maneuvers to include start, taxi, runup, turn pattern, slow flight, stalls, Vmc demo (by instructor), engine failures cruise and after takeoff (at altitude), landing pattern, SSE landing pattern, waveoff, SSE waveoff, landings, abort, EP's, and BAW. Instructional skills to include headwork, cockpit/crew coordination, EP checklists, time management, and critique/ error correction. Postflight to include debrief, critique, and NATOPS grading standards. Flight will utilize the FAM-102 syllabus.

Reference. FRS Maneuver Description Guide and Instructor Training Guide.

FAM-501 2.0 1 ACFT

Goal. IUT familiarization practice.

Requirement. Brief instructional technique, systems knowledge, procedural knowledge, time management. Review start, runup and shutdown, turn pattern, slow flight, stalls, landing pattern, landings, abort, SSE reverse, SSE after takeoff (no rudder boost/with autofeather), short field takeoff, dual engine failure (simulated), windmilling airstart, SSE/2 engine out ditch, prop malfunctions, and engine fires (at altitude, in pattern, and on deck). Instructional skills to include headwork, cockpit/crew coordination, EP checklists, time management, and critique/error correction. Postflight to include debrief, critique, and grading. Flight will utilize the FAM-103 syllabus.

Reference. FRS Maneuver Description Guide and Instructor Training Guide.

INAV-502 2.0 1 ACFT

Goal. IUT instrument/navigation introduction.

Requirement. Brief instructional technique, systems knowledge, procedural knowledge, and time management. Review start, runup & shutdown, engine failures (at altitude, in pattern, and ATO), slow flight, stalls, ditch, emergency descent, landings (full, approach, no flap), SSE landing, abort, and waveoffs (2 engine and SSE). Vmc demo (normal, no inputs, and wrong rudder) microburst escape, basic instruments (BI) (turns, climb, descents), Autopilot/Flight Director (AP/FD) use, and AP/FD on ILS & nonprecision approaches. Instructional skills to include headwork, cockpit/crew coordination, EP checklists, time management, critique/error correction. Postflight to include debrief, critique, grading. Flight will utilize the FAM-104 and INST-111 syllabus.

Reference. FRS Maneuver Description Guide and Instructor Training Guide.

INAV-503 2.0 1 ACFT N

Goal. IUT instrument/navigation practice.

Requirement. Brief instructional technique, systems knowledge, procedural knowledge, time management, FLIP publications, and filing. Flight maneuvers to include VOR approach, NDB approach, circling approach, holding, ILS, PAR, selected approaches to include SSE procedures, en route procedures, jet routes, and airspeed/endurance. Instructional skills to include headwork, cockpit/crew coordination, EP checklists, time management, and critique/error correction. Postflight to include debrief, critique, and grading. Flight will utilize INST-111 and INST-112 syllabus.

Reference. FRS Maneuver Description Guide and Instructor Training Guide.

STAN-504 2.5 E 1 ACFT

Goal. IUT standardization check. The flight evaluation is designed to measure with maximum objectivity the degree of standardization demonstrated by pilot and crewmembers. It is not intended to measure both proficiency and/or ability of those evaluated beyond a point necessary to ensure safety of flight.

Requirement. Brief evaluation to include instructional technique, procedures for EP simulation, Pilot Flying (PF) responsibilities, Pilot In Command (PIC) actions, and oral examination. Discuss the instructor role in training a Naval Flight Officer to become a qualified observer in the C-12. Flight maneuver setup, evaluation skills, complete coverage of NATOPS grade sheet, BAW, headwork, situational awareness, and crew coordination. IUT will debrief and analyze the flight per the NATOPS evaluation sheet.

Reference. FRS Maneuver Description Guide and Instructor Training Guide.

760. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UC-12 MOS: 7555 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	0.0	*	3.0	X	X			
	101	2.5	*	3.0	X	X			
	102	2.5	*	3.0	X	X	X		
	103	2.5	*	3.0	X	X	X		
	104	2.0	*	3.0	X	X			
	105	2.0	*	5.0	X	X			N
INST	110	2.5	*	5.0	X	X			(N)
	111	2.0	*	5.0	X	X			(N)
	112	2.0	*	5.0	X	X	X		(N)
MISSION READY TRAINING									
NAV	200	3.0	6	10.0	X	X	X		(N)
MISSION QUALIFICATION TRAINING									
T2PCK	300	2.5	C	15.0	X	X	X	X	
FULL-MISSION QUALIFICATION TRAINING									
TPCFAM	400	2.0	1	7.5	X	X			(N)
TPCCK	410	2.5	C	7.5	X	X	X	X	

Figure 7-1.--MOS 7555 Refly Interval, Mission Readiness Percentage.

AIRCRAFT: UC-12 MOS: 75XX CREW POSITION: QUALIFIED OBSERVER

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	0.0	*	10.0	X	X	X		
	101	2.0	*	10.0	X	X	X		
	102	2.0	*	15.0	X	X	X		
MISSION READY TRAINING									
INST	200	2.0	*	10.0	X	X	X		(N)
MISSION QUALIFICATION TRAINING									
NAV	300	2.0	6	15.0	X	X	X		N
FULL-MISSION QUALIFICATION									
QOCK	400	2.0	C	15.0	X	X	X	X	

Figure 7-2.--MOS 75XX Refly Interval, Mission Readiness Percentage.

FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
NAV	200	
T2PCK	300	200
TPCFAM	400	200,300
TPCCK	410	200,300,400

Figure 7-3.--MOS 7555 Flight Update Chaining.

QUALIFIED OBSERVER FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
NAV	200	
T2PCK	300	200
TPCFAM	400	200,300

Figure 7-4.--MOS 75XX Flight Update Chaining.

CHAPTER 8

UC-12 TRANSPORT AIRCREWMAN

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 8

UC-12 TRANSPORT AIRCREWMAN

800. PROGRAMS OF INSTRUCTION (POI) FOR BASIC, TRANSITION, AND CONVERSION TRANSPORT AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground Training	FRS/MCAS
2-6	Flight Training	FRS/MCAS

801. POI FOR REFRESHER TRANSPORT AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground Training	FRS/MCAS
2-4	Flight Training	MCAS

810. GROUND TRAINING COURSES OF INSTRUCTION. The UC-12 ground school is conducted at the Navy FRS/MCAS per UC-12 NATOPS Manual.

811. SQUADRON LEVEL TRAINING

Orientation
Aircraft Systems
Normal Procedures
Emergency Procedures and Equipment *
Aircraft Limitations
Aircraft Flight Characteristics
Mission Planning
Weight and Balance
Aircraft Configuration (pax/cargo/medevac)
Passenger Loading/Briefing/Offloading
Cargo Loading/Offloading
Flight Publications
Flight Logs and Records (LFR, NAVFLIRS, etc.)
Aircraft Inspections (preflight, postflight)
Line Operations (aircraft directing/parking)
Aircraft Servicing
Aircraft Securing/Security
First Aid/CPR
Navigation Equipment (if installed)
Aircrew Coordination and Responsibilities
NATOPS Open/Closed Book Exams

NOTE: * Emergency procedures instruction shall include: egress, escape hatch, life raft positioning responsibilities, fire extinguishers, and emergency radio.

820. FLIGHT TRAINING FOR BASIC, TRANSITION, AND CONVERSION TRANSPORT AIRCREWMAN

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Familiarization	**4**	**6.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Airlift Mission	**2**	**6.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
TA Familiarization	**1**	**3.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
TA Check	**1**	**2.0**	**15.0**
Total for Basic, Transition and Conversion Transport Aircrewman	**8**	**17.0**	**100.0**

821. REFRESHER TRANSPORT AIRCREWMAN

STAGE	FLIGHTS	HOURS
Familiarization	2	4.0
Airlift Mission	1	3.0
TA Check	1	2.0
Total for Refresher	**4**	**9.0**

822. INSTRUCTOR UNDER TRAINING (IUT) AIRCREWMAN

STAGE	FLIGHTS	HOURS
Familiarization	1	2.0
Airlift Mission	1	2.0
Standardization Check	1	2.0
Total for IUT	**3**	**6.0**

830. SIMULATOR TRAINING. Not applicable.

840. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. A Transport Aircrewman Under Instruction (TAUI) who was previously NATOPS qualified in the UC-12 will complete the "Refresher" syllabus. All others will complete the "Basic, Transition, or Conversion" syllabus.

2. The time required to train a Transport Aircrewman will vary depending on previous experience and individual ability. Personnel under instruction may come from any MOS. The requirement for 50 hours total flight time will be waived upon successful completion of the UC-12 T&R syllabus per paragraph 1262.2 of OPNAVINST 3710.7. The number of hours required for designation as a TA are a minimum and may be increased as deemed necessary by the unit commander. All flight training will be conducted in conjunction with pilot training or operational flights.

3. The minimum crew will consist of a Transport Plane Commander (TPC), Copilot (T2P/PUI/QO/QOUI), Transport Aircrewman Instructor (TAI) and Transport Aircrewman Under Instruction (TAUI).

4. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

841. MISSION CAPABLE TRAINING

1. Purpose. To familiarize the TAUI with the UC-12 aircraft. Instruction will emphasize normal and emergency procedures, operation of aircraft systems, and aircraft inspections and servicing.

2. Flight Training (4 Flights, 6.0 Hours)

FAM-100 0.0 T,C 1 ACFT

Goal. Introduce UC-12 ground procedures. No flight time.

Requirement. Discuss military appearance, brief and debrief, flight publications and flight planning, and emergency procedures (TA responsibilities). Introduce TAUI to BASI personnel. Intro-duce preflight and postflight inspections, airframe visual checks, checklists (normal and emergency), and cockpit checks and procedures.

FAM-101 2.0 T,C,R 1 ACFT

Goal. Introduce UC-12 normal and emergency procedures.

Requirement. Review military appearance and all inspections. Discuss onboard emergency equipment and passenger brief. Discuss the following emergency procedures: electrical fire, cabin fire, emergency evacuation, incapacitated passenger, ditching, pressurization system failures, and elimination of smoke and fumes.

FAM-102 2.0 T,C 1 ACFT

Goal. Introduce TA ground responsibilities.

Requirement. Review military appearance and all inspections, passenger brief, cockpit check and procedures, aircraft servicing, and all previously discussed emergency procedures. Discuss the aircraft in general (including dimensions), basic aircraft weight, weight and balance, cargo loading, flight packet, credit cards and receipts, passenger manifest, and lookout doctrine. Introduce Logistic Flight Record (LFR) and NAVFLIRS.

FAM-103 2.0 T,C,R 1 ACFT (N)

Goal. Review UC-12 normal and emergency procedures.

Requirement. Review military appearance, flight preparation, passenger brief, crew coordination, aircraft servicing, LFR's and NAVFLIRS. Discuss passenger assistance and comfort, airframe/systems/engine operating limitations, environmental system, oxygen system, anti-ice/de-ice system, lighting system and TA responsibilities at night.

842. MISSION READY TRAINING

1. Purpose. To refine the TAUI's knowledge of the UC-12 systems, normal and emergency procedures, and to introduce the TA responsibilities on airlift missions.

2. Flight Training (2 Flights, 6.0 Hours)

FRAG-200 3.0 T,C 1 ACFT (N)

Goal. Introduce TA responsibilities during an airlift mission.

Requirement. Discuss landing gear, wheel brakes, wing flaps and flight control systems, engines and related systems, AC/DC electrical systems, fire detection and extinguishing system, hazardous and red label cargo, and danger areas. Discuss emergency procedures to include the landing gear, trim, brakes, engine, oil and fuel, and electrical systems. Introduce TA responsibilities during passenger, cargo, and medevac missions.

FRAG-201 3.0 T,C,R 1 ACFT (N)

Goal. Introduce additional TA responsibilities during airlift missions.

Requirement. Review military appearance, flight planning, brief and debrief, all inspections, passenger brief, and emergency procedures. Discuss baggage handling, hazardous cargo, enroute breakdowns and liaison, and travel claims. Discuss military courtesies, quarterdeck procedures, and the "VIP" brief. Introduce hot and cold weather procedures, aircraft securing, and RON procedures.

843. MISSION QUALIFICATION TRAINING

1. Purpose. To review all previously introduced instruction.

2. Flight Training (1 Flight, 3.0 Hours)

TA FAM-300 3.0 T,C 1 ACFT (N)

Goal. Review all previously introduced instruction.

Requirement. During an airlift mission, review all crew duties, aircraft systems, and normal and emergency procedures leading to designation as a UC-12 Transport Aircrewman.

844. FULL-MISSION QUALIFICATION TRAINING

1. Purpose. TAUI will demonstrate the ability to meet NATOPS evaluation criteria for Transport Aircrewman.

2. Flight Training (1 Flight, 2.0 Hours)

TA CK-400	2.0	T,C,R E	1 ACFT

Goal. To evaluate the TAUI's qualification to become a UC-12 Transport Aircrewman.

Requirement. TAUI must demonstrate a thorough knowledge of aircraft systems, normal and emergency procedures, and duties in compliance with established NATOPS evaluation criteria. Crew: NATOPS Instructor/TAUI. Prerequisites: NATOPS open and closed book examinations.

850. INSTRUCTOR AND SPECIAL FLIGHT/SIMULATOR

1. Purpose. To standardize Transport Aircrewman Instructor (TAI) for the UC-12 aircraft.

2. Crew Requirement. P/CP/TAI/TAIUI.

3. Flight Training (3 Flights, 6.0 Hours)

FAM-500	2.0	1 ACFT

Goal. IUT familiarization introduction.

Requirement. Discuss preflight briefing, instructional techniques, LFR/NAVFLIR, weight and balance, flight packet/credit cards/receipts, flight publications, enroute breakdown liaison, and crew coordination. Demonstrate a thorough knowledge of preflight/postflight procedures, cockpit check, aircraft dimensions/weight limitations, environmental system, oxygen system, cargo loading/tiedown/offloading, selected inflight emergency procedures, ditching procedures, care and use of survival equipment, aircraft cleanliness, and security.

FRAG-501	2.0	1 ACFT

Goal. IUT airlift mission introduction.

Requirement. Discuss preflight briefing, LFR/NAVFLIR, weight and balance, passenger manifest, VIP/passenger arrival/ departure, quarterdeck procedures, and crew coordination. Demonstrate a thorough knowledge of preflight/postflight inspection, passenger embarkation/baggage handling/hazardous cargo procedures, cockpit check, lighting system, airframe/ engine limitations, electrical system, anti-ice/de-ice system, fire detection/extinguisher procedures, hot/cold weather procedures, care and use of survival equipment, ditching procedures, and aircraft cleanliness and security.

STAN-502 2.0 1 ACFT

Goal. IUT standardization check.

Requirement. IUT brief conduct of flight to TAI as a NATOPS evaluation. Demonstrate a thorough knowledge of all aircraft systems, normal and emergency procedures, and TA duties and responsibilities. Conduct standard NATOPS evaluation on TAI and monitor performance within parameters prescribed in the UC-12 NATOPS Manual.

Prerequisite. NATOPS open and closed book examinations.

860. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UC-12 MOS: N/A CREW POSITION: TRANSPORT CREWMAN

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	0.0	*	15.0	X	X			
	101	2.0	*	15.0	X	X	X		
	102	2.0	*	15.0	X	X			
	103	2.0	*	15.0	X	X	X		
MISSION READY TRAINING									
FRAG	200	3.0	*	5.0	X	X			
	201	3.0	6	5.0	X	X	X		
MISSION QUALIFICATION TRAINING									
REV	300	3.0	6	15.0	X	X			
FULL MISSION QUALIFICATION TRAINING									
TACK	400	2.0	C	15.0	X	X	X	X	

Figure 8-1.--UC-12 Transport Aircrewman Refly Interval, Mission Readiness Percentage.

TRANSPORT AIRCREWMAN FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
FRAG	201	
REV	300	201
TACK	400	201,300

Figure 8-2.--UC-12 Transport Aircrewman Flight Update Chaining

CHAPTER 9

HH-46 (SAR) PILOT

*** * N O T E * ***

Aircrews shall include aircrew coordination techniques as part of their brief.

CHAPTER 9

HH-46 (SAR) PILOT

900. PROGRAMS OF INSTRUCTION (POI) FOR BASIC AND REFRESHER PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1-56	Full-Combat Qualification Training in CH-46E SR&M	FMF
57-58	SAR Pilot Training Course	HS-1
59-60	HH-46 SAR Simulator	HC-3
61-67	Ground/Flight Training	HC-3/MCAS

901. POI FOR INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1-6	Flight Training	MCAS

910. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
SAR Ground School/SAR Pilot Training Course	HS-1
HH-46 SAR Simulator	HC-3

911. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and Pilot NATOPS Pocket Checklist
Instrument Procedures and Changes
Flight Safety
SAR Mission Planning and Briefing
SAR TACAID
LORAN/Omega System Operation
Squadron and Air Station Standard Operating Procedures (SOP's)
Local Course Rules
Survival
Flight Training Movies; i.e., "Ground Resonance"

920. FLIGHT TRAINING FOR BASIC AND REFRESHER PILOT. Pilots that are current in the model H-46 helicopter will be programmed to fly the complete program of instruction, regardless of qualifications. All flights shall be flown with a designated NATOPS Instructor.

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	40.0
Familiarization	3	4.5	9.0
Instruments	2	3.0	4.0
Night Familiarization	2	3.0	7.0
	7	**10.5**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Confined Area Landings	2	3.0	7.0
Mountain Area Landings	2	3.0	1.0
External Loads	1	1.5	2.0
	5	**7.5**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search And Rescue Navigation	3	5.0	1.5
Day Search and Rescue	5	7.5	3.0
Night Search and Rescue	9	13.5	9.5
Night Vision Goggles	1	1.5	1.0
	18	**27.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggles	2	4.0	11.0
Carrier Qualification	6	9.0	4.0
	8	**13.0**	**15.0**
Total	**38**	**58.5**	**100.0**
5. Instructor Under Training	**4**	**5.0**	
6. Special Training	**4**	**9.0**	

930. SIMULATOR TRAINING

1. Purpose. Familiarize all Pilots with HH-46 normal cockpit procedures, crew coordination, systems operations and limitations, emergency procedures, and to introduce instrument flight and emergency procedures in a SAR environment.

2. General. Crew coordination shall always be stressed in training of all pilots. In all cases, there shall be a primary and secondary pilot training mission, although only one pilot shall be evaluated at any time.

3. Initial Simulator Training (4 Periods, 4.0 Hours)

OFT-lOO 1.0 2F117B

Goal. Normal procedures, start, engage, and shut-down emergency procedures introduction.

Requirement. Introduce system differences between HH-46 aircraft, start, engage, and shut-down emergencies.

OFT-lOl 1.0 2F117B

Goal. Normal start, engage, shut-down procedures, and in-flight emergencies.

Requirement. Review normal procedures. Introduce in-flight emergencies.

OFT-102 1.0 2F117B

Goal. Doppler introduction.

Requirement. Discuss emergency water landing in a night environment, single engine takeoff from water at night and emergency exits. Introduce low level instrument flight over water, Doppler pattern and procedures, and engine failures in the Doppler pattern.

OFT-103 1.0 2F117B

Goal. Doppler and emergency procedures review.

Requirement. Review OFT-102. Introduce search patterns.

4. Refresher Simulator Training (3 Periods, 3 Hours)

OFT-ll0 1.0 2F117B

Goal. Emergency procedures review.

Requirement. Introduce all start, engage, shutdown and in-flight emergencies.

OFT-lll 1.0 2F117B

Goal. Doppler review.

Requirement. Discuss emergency water landing at night, single engine takeoff from the water at night and emergency exits. Review low level instrument flight over water, Doppler patterns and procedures, and engine failure in the Doppler pattern.

OFT-112 1.0 2F117B

Goal. Doppler and emergency procedures review.

Requirement. Review all Doppler procedures and emergencies.

940. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Purpose. Become familiar with aircraft limitations and emergency procedures. Develop proficiency in SAR planning, in-flight procedures, and knowledge of safety regulations that pertain to SAR operations. Become familiar with SAR procedures and requirements.

2. General

a. Pilots that are current in the model H-46 helicopter will be programmed to fly the complete program of instruction, regardless of

qualifications. All flights shall be flown with a designated NATOPS Instructor.

b. Local commands are granted the authority to waive requirements that are not applicable to the local operating environment.

c. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

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

e. Aircrews shall fly events annotated with an "NVG" with Night Vision Goggles for the entire flight. Aircrews may fly events with "(NVG)" with the option of using NVG's.

f. Flight training events which are not flown in mission capable training shall be flown in the subsequent stage of training.

g. All flights annotated with an "E" shall be evaluated per T&R Manual, Volume 1, Chapter 6, Paragraph 6001.c.

3. Minimum Altitudes. All syllabus sorties should be flown at the lowest altitude possible commensurate with the sortie description and flight safety.

4. Refly Interval. Figure 9-1 shows refly interval and Mission Readiness Percentage for MOS 7562.

5. Aircrew Evaluation Flights. All pilots are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-600 or RQD-601).

b. Instrument Check (RQD-602).

c. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.

d. Squadrons shall use Figure 9-3, the Aircrew Training Form for any evaluated flights.

6. Aircrew Coordination. Aircrews shall include aircrew coordination techniques as part of their brief.

941. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. Become familiar with aircraft flight characteristics, limitations, and emergency procedures; develop proficiency in all maneuvers contained the familiarization stage.

b. General

(1) Prior to FAM-lOO conduct a thorough preflight and postflight inspection with a qualified SAR pilot.

(2) In preparing for a sortie, pilots shall study emergencies as prescribed in the NATOPS Flight Manual. The pilot's pocket checklist lacks important information presented in the NATOPS Flight Manual. In addition to the emergency procedures, study the aircraft systems related to each particular malfunction.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (3 Flights, 4.5 Hours)

FAM-100 1.5 1 ACFT

Goal. Conduct an area familiarization.

Requirement

(1) Brief/Discuss. Differences between HH-46D and CH-46E aircraft.

(2) Introduce

(a) Normal cockpit, start, radio procedures, and taxiing.

(b) Local course rules.

(c) All familiarization procedures as per NATOPS.

FAM-101 1.5 1 ACFT

Goal. Conduct basic familiarization practice.

Requirement

(1) Review

(a) All familiarization maneuvers with emphasis on hover and in-flight single engine emergencies.

(b) Perform practice autorotations and practice single engine flight.

(c) Local course rules.

FAM-102 1.5 1 ACFT

Goal. Review as required.

Requirement. Progress check to review all emergency procedures.

2. Instruments

a. Purpose. Develop proficiency in instrument flight procedures peculiar to the HH-46D SR&M aircraft under simulated or actual instrument conditions, using all navigation aids.

b. General. All instrument flights will be conducted under actual or simulated instrument conditions.

c. Prerequisite. NFAM-130 shall be flown prior to any night instrument flights.

d. Crew Requirements. IP/PUI/CC.

e. Flight Training (2 Flights, 3.0 Hours)

INST-120 1.5 1 ACFT

Goal. Review basic instrument and radio work.

Requirement

(1) Discuss

(a) Local instrument patterns.

(b) Approach criteria.

(2) Review

(a) Basic instrument work.

(b) TACAN procedures and approaches.

(c) ADF procedures and approaches.

INST-121 1.5 1 ACFT (N)

Goal. Practice radio instruments.

Requirement

(1) Brief/Discuss. Visual illusions and vertigo

(2) Review

(a) RADAR approaches.

(b) Instrument navigation.

(c) Appropriate emergency procedures.

3. Night Familiarization

a. Purpose. Develop proficiency in operations during conditions of darkness.

b. General

(1) Familiarization maneuver descriptions may be found in the NATOPS Manual.

(2) Basic instrument procedures are discussed in the NATOPS Instrument Flight Manual (NAVAIR 00-80T-112).

c. Prerequisite

(1) NFAM-130 shall be flown prior to any night instrument flights.

(2) Night familiarization flight shall be flown at least 30 minutes after official sunset.

d. Crew Requirements. IP/PUI/CC.

e. Flight Training (2 Flights, 3.0 Hours)

NFAM-130 1.5 1 ACFT N

Goal. Night introduction.

Requirement

(1) Brief/Discuss. Aircraft lighting systems (to include SX-16 Nitesun).

(2) Review

(a) Night basic airwork.

(b) Low work and landings with and without aircraft lighting systems.

(c) Perform practice autorotations.

(d) Practice single engine flight.

(e) Normal procedures at a lit airfield

NFAM-l3l 1.5 1 ACFT N

Goal. Conduct landings and takeoffs at night.

Requirement. This flight should be conducted at an unlit field.

(1) Review. All FAM maneuvers.

942. MISSION READY TRAINING

1. Confined Area Landings

a. Purpose. Develop the ability to perform takeoffs and landings in confined areas.

b. Flight Training (2 Flights, 3.0 Hours)

c. Crew Requirements. IP/PUI/CC.

CAL-200 1.5 1 ACFT

Goal. Conduct day confined area landings.

Requirement

(1) Brief/Discuss. Normal and emergency procedures and crew coordination as they relate to CAL approaches.

(2) Review

(a) Normal Approach.

(b) Precision approach

(c) Hover/No-hover landings.

CAL-201 1.5 1 ACFT N

Goal. Conduct night confined area landings. Progress check.

Requirement

(1) Brief/Discuss

(a) Normal and emergency procedures and crew coordination as they relate to CAL approaches.

(b) Aircraft lighting.

(c) Landing Zone lighting.

(2) Review

(a) CAL Approaches.

(b) Emergency procedures.

2. Mountain Area Landings (MAL)

a. Purpose. Develop proficiency in operations around mountainous terrain.

b. Crew Requirements. IP/PUI/CC.

c. Flight Training (2 Flights, 3.0 Hours)

MAL-210 1.5 1 ACFT

Goal. Conduct day mountainous area landings. Emphasis should be placed upon emergencies, specifically single engine parameters.

Requirement

(1) Brief/Discuss

(a) Effects of wind on mountain operations.

(b) Landing on/in pinnacles, slopes, valleys, and canyons.

(c) Effects of high density altitude, and high gross weights.

(2) Introduce

(a) Crosswind, up slope, and downslope landings correlating to tail clearance.

(b) Landing on/in pinnacles, slopes, valleys, and canyons.

MAL-211 1.5 1 ACFT N

Goal. Introduce night MAL takeoffs and landings.

Requirement

(1) Brief/Discuss

(a) Proper utilization techniques of all aircraft lighting systems.

(b) Emergency procedures.

(2) Introduce

(a) Normal/Steep approaches.

(b) Wave-off.

3. External Loads

a. Purpose. Develop the ability to conduct external cargo and water bucket operations.

b. Crew Requirements. IP/PUI/CC.

c. Flight Training (1 Flight, 1.5 Hours)

EXT-220 1.5 1 ACFT

Goal. External cargo and water bucket operations proficiency.

Requirement

(1) Brief/Discuss

(a) Cargo pickup and release procedures.

(b) Crew coordination.

(c) ICS voice procedures.

(d) Lost communications hand signals.

(e) Emergency Procedures.

(f) Maximum HOGE weight for pickup and delivery and flight envelopes with external loads.

(2) Introduce. Water bucket operations.

(3) Review

(a) Hover check.

(b) All modes of cargo hook operation.

943. MISSION QUALIFICATION TRAINING

1. Search and Rescue

a. Purpose. Develop proficiency in Search and Rescue operations and navigation, to include search planning, search patterns and techniques, and Doppler approach procedures.

b. Prerequisites

(1) The following flights of the Mission Capable and Mission Ready phases shall be satisfactorily completed prior to commencement of SAR mission qualification training:

(a) FAM-l00 to FAM-102

(b) INST-120

(c) NFAM-130

(d) CAL-200

(2) Local commands are granted the authority to designate pilots as Day SAR H2P upon completion of the flights listed in paragraph 943.1.b.(1) with the addition of the following flights:

(a) NAV-300

(b) SAR-303

(3) Local commands are granted the authority to designate pilots as Day/Night SAR H2P qualified upon completion of SAR-321.

(4) Prior to completing the mission qualification phase, all pilots shall:

(a) Complete 25 coupled Doppler approaches to a hover overwater with at least 15 at night. At least 7 daylight approaches must be conducted under simulated (hooded) instrument conditions. Two daylight/twilight approaches shall be flown on the same day prior to the first night initial qualification flight.

(b) Complete 35 manual Doppler approaches to a hover overwater with at least 25 at night. Two daylight/twilight approaches shall be flown on the same day prior to the first night initial qualification flight.

(5) Prior to the completion of the Mission Qualification Training Phase, and designation as a Search and Rescue Helicopter Aircraft Commander (SAR HAC), the following ground training shall be completed:

(a) Search planning, to include local geographic and weather factors, parachute drift, water currents, sweep width, track space, probability of detection, and search patterns.

(b) Utilization and limitations of SAR equipment.

(c) Review of SAR publications and directives.

(d) Map study of the local area, to include landmarks, medical facilities, course rules, and landing areas.

(e) SAR coordinator, SAR mission commander, and on-scene commander responsibilities and duties.

(f) Local SAR organizations and their relationships.

(g) Familiarity with local tactical and air traffic control agencies, and their capabilities and frequencies.

(h) Legal implications of Search and Rescue.

(i) LORAN/Omega system operation.

2. Search And Rescue Navigation

a. Purpose. Develop proficiency in conducting search operations using additional navigation aids as available.

b. General. The training is designed around local LORAN and Omega capabilities. Differences in configurations and equipment will require modifications at each SAR command. Lack of appropriate equipment, is basis for waiver of these syllabus flights.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (3 Flights, 5.0 Hours)

NAV-300 2.0 1 ACFT

Goal. Conduct basic LORAN/Omega navigation training.

Requirement

(1) Brief/Discuss

(a) Basic theory of LORAN/Omega navigation.

(b) System functions as they apply to point-to-point navigation.

(c) Tracking relationships to include track angle error.

(d) Desired track, actual track, cross track, and CDI sensitivity.

(2) Introduce

(a) Point-to-point navigation.

(b) Conduct a flight consisting of a minimum of four legs using LORAN/Omega.

NAV-301 1.5 1 ACFT

Goal. Conduct advanced LORAN/Omega navigation training.

Requirement

(1) Brief/Discuss

(a) Search Patterns.

(b) Gridnav programming.

(c) Parallel track offset.

(d) Systems preparation for search execution.

(e) Utilization of LORAN/Omega to conduct search patterns.

(2) Introduce

(a) Search pattern execution using LORAN/Omega.

(b) Parallel search pattern.

(c) Sector search pattern.

(d) Trackline search pattern.

(3) Review. Point-to-point navigation.

NAV-302 1.5 1 ACFT

Goal. Progress check on LORAN/Omega navigation.

Requirement

(1) Brief/Discuss

(a) Route planning.

(b) Signal Loss and systems failures.

(c) Enroute wind determination.

(d) Present and estimated position error.

(2) Review

(a) Point-to-point navigation.

(b) Execution of search patterns using LORAN/Omega.

(c) Conduct a flight navigating to a simulated search area.

(d) Upon arrival, conduct a minimum of two different search patterns and return using LORAN/Omega.

3. Day Search and Rescue

a. Purpose. Develop the ability to perform day Search and Rescue operations.

b. Crew Requirements. IP/PUI/CC/SARMT/RAC.

c. Flight Training (5 Flights, 7.5 Hours)

SAR-303 1.5 1 ACFT

Goal. Conduct day maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss

(a) Crew responsibilities.

(b) Coupled Doppler system.

(c) Saltwater encrustation.

(2) Introduce

(a) Parallel search pattern.

(b) Creeping line search patterns.

(c) Doppler approach pattern.

(d) Conduct manual and coupled approaches.

SAR-304 1.5 1 ACFT

Goal. Conduct day overland SAR training.

Requirement

(1) Brief/Discuss

(a) Alert conditions and procedures.

(b) Preflight of SAR equipment.

(c) Square search patterns.

(d) Sector search patterns.

(e) Overland crewman deployment and pickup.

(f) Voice procedures (both radio and ICS).

(2) Introduce

(a) Square search patterns.

(b) Sector search patterns.

(c) Conduct overland hoisting.

(3) Review. SAR-303.

SAR-305 1.5 1 ACFT

Goal. Conduct day maritime SAR training and SAR approach training.

Requirement

(1) Brief/Discuss

(a) Enroute checklist.

(b) Procedures for sighting the victim.

(c) Hand/Arm signals.

(d) Use of flare for wind direction/speed determination.

(e) Emergency procedures related to hoist operations.

(f) Ditching procedures/considerations.

(2) Introduce

(a) Perform an actual deployment of the swimmer(s) using both hoist and the 10 foot/l0 knot technique.

(b) Perform short-haul of swimmer.

(c) Recover swimmer(s) and survivor(s).

(3) Review. Manual and coupled approaches.

Ordnance. 1 Mk-58 Flares.

SAR-306 1.5 1 ACFT

Goal. Conduct day overland SAR training.

Requirement

(1) Brief/Discuss. Emergency procedures related to hoist and rappel operations.

(2) Introduce

(a) Trackline search pattern.

(b) Contour search patterns.

(c) Land hoist operations.

(d) Rappel and short-haul operations.

(3) Review. Previous work as required.

SAR-307 1.5 1 ACFT

Goal. Conduct day maritime SAR hoist training from a boat or ship.

Requirement

(1) Brief/Discuss. Normal and emergency procedures related to shipboard hoisting operations.

(2) Introduce

(a) Crew coordination.

(b) Hover techniques.

(c) Equipment utilization with emphasis on trail-line and rescue/medevac litter use.

4. Night Search and Rescue

a. Purpose. Develop proficiency in conducting night search and rescue operations.

b. Crew Requirements. IP/PUI/CC/SARMT/RAC.

c. Flight Training (9 Flights, 13.5 Hours)

SAR-320 1.5 1 ACFT N

Goal. Conduct night overland SAR training.

Requirement

(1) Brief/Discuss. Emergency procedures related to hoist and rappel operations.

(2) Introduce. Land hoist operations.

(3) Review. All previous work.

SAR-321 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss

(a) Night Doppler approach pattern.

(b) Deployment of the swimmer at night.

(c) Night light signals from a deployed swimmer.

(d) Flare deployment.

(e) Electrical and Doppler failure.

(2) Introduce. Conduct manual and coupled approaches.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-322 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss

(a) Emergency procedures relative to the Doppler approach pattern.

(b) Waveoff.

(2) Review

(a) All previous work.

(b) Conduct manual and coupled approaches.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-323 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss. Full Flare Pattern.

(2) Introduce

(a) Flare search patterns.

(b) Deploy full flare pattern.

(c) Conduct manual and coupled approaches.

(3) Review. All previous work.

Ordnance. Eight Mk-58 Flares.

SAR-324 1.5 1 ACFT N

Goal. Conduct night SAR and SAR approach training.

Requirement

(1) Brief/Discuss. UHF homing search patterns.

(2) Introduce. UHF homing search patterns.

(3) Review

(a) Conduct manual and coupled approaches.

(b) All previous work.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-325 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss. Emergency procedures.

(2) Review

(a) All Previous work.

(b) Conduct manual and coupled approaches.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-326 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss

(a) Swimmer deployment at night.

(b) Light signals to/from a deployed swimmer.

(c) Emergency procedures related to hoist operations.

(2) Review

(a) Previous work as required.

(b) Deploy and recover swimmer(s) and survivor(s).

(c) Conduct manual and coupled approaches.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-327 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement

(1) Brief/Discuss

(a) Effects of sea state on helicopter stability.

(b) Visual Effects of shipboard lighting.

(2) Introduce. Conduct night SAR hoist training from a boat or ship.

(3) Review

(a) All previous work.

(b) Conduct manual and coupled approaches.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-328 1.5 1 ACFT N

Goal. Conduct night SAR exercise.

Requirement

(1) Brief/Discuss. Rescue plan to all aircrew on their individual responsibilities.

(2) Review

(a) Launch on a simulated SAR mission.

(b) Formulate a plan

(c) Brief Plan to all aircrew on their individual responsibilities.

(d) Launch and conduct formulated plan.

(e) All previous work.

(f) Conduct manual and coupled approaches.

Ordnance. 3 Mk-58 Flares

6. Night Vision Goggles

a. Purpose. Develop proficiency in conducting basic operations, navigation and SAR operations using NVG's.

b. General. Search and Rescue NSQ consists of NVG-330 through 401.

c. Prerequisites

(1) The Night Operations Course contained in the MAWTS-1 Course Catalog shall be completed prior to conducting NVG flights.

(2) The PUI shall have completed all NVG flights in the Mission Capable syllabus per T&R Manual, Volume 3, Chapter 2.

(3) Basic and refresher pilots who were previously NSQ per T&R Manual, Volume 3 shall be required to complete this program of instruction.

(4) Pilots not SAR NSQ shall fly all flights with a designated SAR NSI.

(5) The pilot under instruction shall be a designated SAR H2P/HAC.

d. Crew Requirement NSFI/PUI/CC/O.

e. Flight Training (1 Flight, 1.5 Hours)

NVG-330 1.5 1 ACFT N NVG

Goal. Introduce NVG aided flight.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Crew comfort levels.

(c) NVG operations and limitations.

(d) Emergency procedures.

(e) Differences between HH-46D and CH-46E.

(2) Introduce

(a) Use of NVG's at an unlit field under (ambient light conditions of .0022 LUX or greater.)

(b) Use of NVG's while performing taxi, basic low work, and normal takeoffs/landings.

(c) Touch and go landings with emphasis on aircraft control and cockpit coordination.

944. FULL-MISSION QUALIFICATION TRAINING

1. Night Vision Goggles

a. Crew Requirement. NSSI/PUI/CC/O.

b. Flight Training (2 Flights, 4.0 Hours)

NVG-400 2.0 1 ACFT N NVG

Goal. Develop proficiency in overland SAR operations using NVG's. This flight may be conducted in High Light Level Conditions.

Requirement

(1) Brief/Discuss

(a) Crew Coordination.

(b) Crew comfort levels.

(c) Aircraft lighting.

(d) Navigation and search altitudes.

(e) Scanning techniques.

(2) Introduce

(a) Confined Area takeoff and landings using NVG's.

(b) Plan/Navigate a route to a site and conduct search patterns using NVG's.

(c) Enroute to a CAL site demonstrate the difficulty of terrain reference at altitude.

(d) Conduct night SAR hoist operations.

NVG-401 2.0 1 ACFT N NVG

Goal. Develop proficiency in low level navigation, and maritime SAR operations using NVG's under low light level conditions (below .0022 LUX).

Requirement

(1) Brief/Discuss

(a) Crew Coordination.

(b) Crew comfort levels.

(c) Aircraft lighting.

(d) Navigation and search altitudes.

(e) Scanning techniques.

(f) Emergency procedures related to hoist operations.

(2) Introduce

(a) Low level navigation under low light level conditions.

(b) During transit demonstrate the difficulty of terrain reference at altitude.

(c) Conduct maritime search patterns.

(d) Conduct manual and coupled approaches.

(2) Brief/Discuss

(a) Crew coordination.

(b) Crew comfort levels.

(c) Navigation and search altitudes.

(d) Obstacles along route of flight.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

2. Carrier Qualification

a. Purpose. Qualify during day and night unaided/NVG shipboard landings.

b. General. Training includes FCLP/CQ and NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. Pilots should be familiar with aviation capable ships to support that contingency. The benefits of NVG operations cannot be overemphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (NSQ).

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

(2) Minimum of 5 landings for each CQ flight.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (6 Flights, 9.0 Hours)

FCLP-420 1.5 1 ACFT

Goal. Day carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/Visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching.

(e) Aircraft lighting.

(2) Introduce

(a) Day FCLP patterns.

(b) Approaches and landings.

(c) Emergency procedures peculiar to shipboard operations.

FCLP-421 1.5 1 ACFT N

Goal. Night unaided carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/Visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching.

(e) Aircraft lighting.

(2) Introduce

(a) Night unaided FCLP patterns.

(b) Approaches and landings.

(c) Emergency procedures peculiar to shipboard operations.

FCLP-422 1.5 1 ACFT N NVG

Goal. NVG carrier pattern familiarization.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Situational Awareness.

(c) Verbal/Visual communications used during shipboard landings.

(d) LSE signals.

(e) Water landing/ditching.

(f) Aircraft lighting.

(2) Introduce

(a) NVG FCLP patterns.

(b) Approaches and landings.

(c) Emergency procedures peculiar to shipboard operations.

CQ-423 1.5 1 ACFT

Goal. Day carrier qualification.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/Visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching.

(e) Aircraft lighting.

(2) Introduce. Day carrier qualification per NATOPS.

CQ-424 1.5 1 ACFT N

Goal. Night carrier qualification.

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Verbal/Visual communications used during shipboard landings.

(c) LSE signals.

(d) Water landing/ditching and other aircraft emergencies relative to the night shipboard environment.

(e) Aircraft lighting.

(f) Night alternate pattern.

(2) Introduce. Night carrier qualification per NATOPS.

CQ-425 1.5 1 ACFT N NVG

Goal. NVG CQ's

Requirement

(1) Brief/Discuss

(a) Aircrew coordination.

(b) Situational Awareness

(c) Verbal/Visual communications used during shipboard landings.

(d) LSE signals.

(e) Water landing/ditching.

(f) Deck heights of various ships/boats.

(g) LSE signals.

(h) NVG Emergency procedures.

(i) Aircraft lighting.

(2) Introduce. NVG Carrier Qualification patterns.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

950. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Initial simulator training shall be completed by all pilots prior to reporting to an SAR billet. Training will be conducted at HC-3 North Island, CA. Refresher training will be conducted annually at HC-3 thereafter.

951. INSTRUCTOR UNDER TRAINING (IUT)

1. Purpose. Develop qualified instructor pilots with the ability to teach SAR operations using standardized flight training.

2. General. Maneuver descriptions are found in the HH-46 Standardization Manual, NATOPS Flight Manual and the MAWTS-1 Course Catalog.

3. Prerequisite

(a) All sorties should be flown with an experienced instructor pilot.

(b) Instructor pilots shall complete all flights in the IUT stage.

4. Crew Requirements. IP/IUT/CC/RAC/IFMT/O.

5. Training

a. Ground Training. IUT's will complete the appropriate portion of the ISD program prior to qualification.

b. Simulator Training. Incorporated in the flight training.

c. Flight Training (4 Flights, 5.0 Hours)

FAM-500 1.0 E 1 ACFT (N)

Goal. Conduct all basic familiarization maneuvers.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Confined area landings.

(c) Emergency procedures.

(2) Review. All FAM stage maneuvers.

INST-501 1.0 E 1 ACFT (N)

Goal. Review basic instrument procedures and introduce basic instrument patterns.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Emergency procedures.

(2) Review

(a) Instruments checklists.

(b) Attitude instrument flight.

(c) Recovery from unusual attitudes.

(d) IFR flight planning.

(e) Precision and nonprecision approaches.

EXT-502 1.5 E 1 ACFT (N)

Goal. Review external cargo operations and personnel hoisting procedures.

Requirement

(1) Brief/Discuss

(a) Crew coordination.

(b) Load computation/planning.

(c) Emergency procedures.

(2) Review

(a) External cargo operations with and without pendant/ sling assembly.

(b) External hoist operations.

(c) Hoist operations using internal winch.

SAR-503 1.5 E 1 ACFT (N)

Goal. Review all SAR inflight procedures.

Requirement

(1) Brief/Discuss

(a) Aircraft configuration.

(b) SAR equipment.

(c) Coordinating agencies.

(d) Flare patterns.

(e) Use of SAR TACAID.

(f) Crew coordination.

(g) Emergency procedures.

(2) Review

(a) LORAN navigation.

(b) Search patterns.

(c) Manual and coupled approaches.

(d) Deployment of swimmer/corpsman.

(e) Inland/Maritime survivor recovery.

(f) Use of enroute checklists.

Ordnance. Eight MK-58 flares.

952. GRADUATE LEVEL COURSES

1. Night Systems SAR Instructor (NSSI).

a. The Night System SAR Instructor (NSSI) Course and training codes are listed in the MAWTS-1 Course Catalog. There will be no refly factors for these instructor flights.

b. An NSSI is a NA who has completed the NVG syllabus, certified by a MAWTS-1 NSI and designated by his squadron commanding officer. Designated NSSI's are qualified to instruct all NVG flights.

c. Previous qualifications represent a wealth of experience in NVG operations which may enhance the capabilities of a SAR unit. Pilots that have completed the SAR and NVG syllabi and meet the following criteria shall be eligible for the NSSI syllabus:

(1) SAR Instructor designation.

(2) Twenty-five hours or more of NVG time.

(3) Ten hours or more of NVG time under low light level conditions.

d. Standardization shall be accomplished during MAWTS-1 certification flights and annual SAR evaluations.

953. SPECIAL TRAINING

2. Full-SAR Qualified Pilot (HAC) Check

a. Purpose. Determine if the pilot is qualified per the criteria contained in the H-46 NATOPS Flight Manual, OPNAVINST 3710.7, and applicable SAR publications.

b. General. SAR check rides should coincide with the annual NATOPS evaluation to the maximum extent possible.

c. Crew Requirements. IP/PUI/CC.

d. Flight Training (4 Flights, 9.0 Hours)

RQD-600 3.0 1 ACFT

Goal. Annual NATOPS Evaluation.

Requirement. Proficiency in the utilization of all aspects of the HH-46 as a system. The proficiency expected by the evaluator in this flight shall commensurate with the experience of the pilot under evaluation.

RQD-601 1.5 1 ACFT (N)

Goal. Annual Instrument Evaluation.

Requirement. The evaluation shall be conducted per the criteria contained within the Instrument Flight Manual. File

and fly an instrument round robin using all navigation equipment available. Evaluate all phases of instrument flight to include precision and nonprecision approaches, partial panel, and instrument holding. Demonstrate proficiency in handling instrument related emergencies to include unusual attitude recoveries.

RQD-602 3.0 1 ACFT (N)

Goal. Evaluate all aspects of the local SAR mission.

Requirement. The check will be conducted per the criteria contained in the NATOPS Flight Manual, OPNAVINST 3710.7, applicable SAR publications, and will cover all practicable operations and procedures contained in this syllabus.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

RQD-603 1.5 1 ACFT

Goal. Conduct evaluation for designation as a Functional Check Pilot (FCP).

Requirement. Per a locally generated syllabus, conduct an evaluation with a previously designated FCP.

960. EXPENDABLE ORDNANCE REQUIREMENTS. These requirements are based on a "per crew" basis per OPNAVNOTE 8010.

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	600 SERIES	IUT	ANNUAL*
Mk-25 Flares			16	2	2		24
Mk-58 Flares			16	1	1	8	19

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Manual Volume 1, Appendix A, page 4.

AIRCRAFT: HH-46 (SAR) MOS: 7562 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	l00	1.5	*	3.0					1 ACFT
	l0l	1.5	*	3.0					1 ACFT
	102	1.5	*	3.0					1 ACFT
INST	120	1.5	*	2.0					1 ACFT
	121	1.5	*	2.0					1 ACFT (N)
NFAM	130	1.5	*	3.5					1 ACFT N
	l3l	1.5	*	3.5					1 ACFT N
MISSION READY TRAINING									
CAL	200	1.5	C	3.0					1 ACFT
	201	1.5	C	4.0					1 ACFT N
MAL	210	1.5	C	0.5					1 ACFT
	211	1.5	C	0.5					1 ACFT N
EXT	220	1.5	C	2.0					1 ACFT
MISSION QUALIFICATION TRAINING									
NAV	300	2.0	C	0.5					1 ACFT
	301	1.5	C	0.5					1 ACFT
	302	1.5	C	0.5					1 ACFT
SAR	303	1.5	C	0.5					1 ACFT
	304	1.5	C	0.5					1 ACFT
	305	1.5	6	0.5				X	1 ACFT
	306	1.5	C	0.5					1 ACFT
	307	1.5	6	1.0				X	1 ACFT
	320	1.5	C	1.0					1 ACFT N
	321	1.5	C	1.0					1 ACFT N
	322	1.5	C	1.0					1 ACFT N
	323	1.5	C	1.0					1 ACFT N
	324	1.5	C	1.0					1 ACFT N
	325	1.5	C	1.0					1 ACFT N
	326	1.5	6	1.0				X	1 ACFT N
	327	1.5	6	1.5				X	1 ACFT N
	328	1.5	6	1.0					1 ACFT N
NVG	330	1.5	6	1.0					1 ACFT N NVG
FULL-MISSION QUALIFICATION TRAINING									
NVG	400	2.0	6	5.0					1 ACFT N NVG
	401	2.0	6	6.0					1 ACFT N NVG

Figure 9-1.-- MOS 7562 Refly Interval, Mission Readiness Percentage.

AIRCRAFT: HH-46 (SAR) MOS: 7562 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	REFLY HRS	INTERVAL	MRP	T	C	R	E	REMARKS
FCLP	420	1.5	C	0.5					1 ACFT
	421	1.5	C	0.5					1 ACFT N
	422	1.5	C	1.0					1 ACFT N NVG
CQ	423	1.5	C	0.5					1 ACFT
	424	1.5	C	0.5					1 ACFTN
	425	1.5	C	1.0					1 ACFT N NVG
INSTRUCTOR UNDER TRAINING (IUT)									
FAM	500	1.0	*					X	1 ACFT (N)
INST	501	1.0	*					X	1 ACFT (N)
EXT	502	1.5	*					X	1 ACFT (N)
SAR	503	1.5	*					X	1 ACFT (N)
SPECIAL TRAINING									
RQD	600	3.0	C					X	1 ACFT
	601	3.0	C					X	1 ACFT (N)
	602	1.5						X	1 ACFT (N)
	603	1.5						X	1 ACFT

Figure 9-1.-- MOS 7562 Refly Interval, Mission Readiness Percentage, Continued.

MOS 7562 FLIGHT UPDATE CHAIN

STAGE	FLIGHT	FLIGHT UPDATED
CAL	200	
	201	200
MAL	210	200
	211	200,201,210
EXT	220	
NAV	300	
	301	300
	302	300,301
SAR	303	300,301,302
	304	300,301,302
	305	300,301,302,303
	306	300,301,302,304
	307	300,301,302
	320	300,301,303,304,305
	320	304,306
	321	303
	322	303,321
	323	303,321,322
	324	303,321,322
	325	303,321,322
	326	303,320,321,322,325
	327	303,307,320,321,322,325
	328	
NVG	330	
NVG	400	200,300,301,302,304,306,330
	401	300,301,302,303,330
FCLP	420	
	421	420
	422	330,420
CQ	423	420
	424	420,421,423
	425	420,422,423
FAM	500	
INST	501	
EXT	502	
SAR	503	
RQD	600	
	601	
	602	
	603	

Figure 9-2.--Pilot Flight Update Chaining

AIRCREW TRAINING FORM
HH-46

	U S	B A	A V	A A
All Flights				
Preflight Planning				
Crew Brief				
Cockpit Procedures				
Taxi				
Basic Airwork				
Headwork				
Voice Procedures				
Emergency Procedures				
Course Rules				
Familiarization				
Min Power Takeoff				
Obstacle Takeoff				
Running Takeoff				
Vertical Takeoff				
Precision Approach				
Normal Approach				
Autorotation				
Quick Stop				
SAS/AFCS Off				
No Hover Landings				
Navigation				
Map Study				
Terrain Association				
Dead Reckoning				
Proper Use of Nav Equip				
Confined Area Landings				
Approach				
Power Control				
Airspeed Control				
X-Wind Takeoff/Landing				
SAR Evolutions				
Headwork				
Transition to Hover				
Control over Survivor				
Pickup				

	U S	B A	A V	A A
External Loads				
Headwork				
Pattern				
Approach				
Transition to Hover				
Control over Load				
Pick up				
Transition to Flight				
Night Vision Goggles				
Taxi				
Hover Work				
Vertical Takeoff				
Vertical Landing				
No Hover Landing				
Precision Approach				
Pattern Work				
Carrier Qualification				
Pattern				
Approach				
Takeoff				
Landing				
Aircrew Coordination				
Decision Making				
Assertiveness				
Mission Analysis				
Communication				
Leadership				
Adaptability/Flexibility				
Situational Awareness				

REMARKS:

Date of Flight _____ Flight Time _____
Stage/Training Code _____ Landings _____
Instructor _____ Student _____

Figure 9-3.--Pilot Aircrew Training Form.

CHAPTER 10

HH-46 (SAR) CREW CHIEF

*** * N O T E * ***

Aircrews shall include aircrew coordination techniques as part of their brief.

CHAPTER 10

HH-46 (SAR) CREW CHIEF

1000. PROGRAMS OF INSTRUCTION (POI) FOR BASIC CONVERSION CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Naval Aircrewman Candidate School	NAS Pensacola
6	Rappel Indoctrination Course HS-1	NAS Jacksonville
7-8	Ground Training	MCAS
9-20	Flight Training	MCAS

1010. GROUND TRAINING COURSES OF INSTRUCTION

COURSE/PHASE	ACTIVITY
Naval Aircrewman Candidate School	NAS Pensacola
Rappel Indoctrination Course HS-1	NAS Jacksonville

1011. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and Crew Chief NATOPS Pocket Checklist
Safety Publications
Aircraft Mishaps
Survival and Rescue Equipment
Utilization and Limitations of SAR Equipment
Ground to Air-Signals
CPR Certification
First Aid Training
Search and Rescue Techniques
Ordnance Safety

1020. FLIGHT TRAINING FOR BASIC AND CONVERSION CREW CHIEF. Crew chiefs that are current in model H-46 helicopter will be programmed to fly the complete program of instruction, regardless of qualifications. All flights shall be flown with a designated NATOPS Instructor.

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	30.0
Familiarization	1	1.5	10.0
Internal Loads	1	1.5	10.0
Night Familiarization	1	1.5	10.0
Total	**3**	**4.5**	**60.0**

2. Mission Ready Training

STAGE	FLlGHTS	HOURS	PERCENT
Confined Area Landings	2	3.0	7.0
External Loads	1	1.0	3.0
Total	**3**	**4.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search and Rescue	13	20.0	13.0
Night Vision Goggle (NVG) Operations	1	1.5	2.0
Total	**14**	**21.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggle (NVG)	2	2.0	11.0
Carrier Qualification	6	9.0	4.0
Total	**8**	**11.0**	**15.0**
Total for Basic and Conversion Crew Chief	**28**	**42.0**	**100.0**

5. Special Flight Performance Requirements

STAGE	FLIGHTS	HOURS
Instructor Under Training	3	4.5
Requirements, Qualifications, and Designations	2	3.5
Total	**5**	**8.0**

1030. SIMULATOR TRAINING. Not applicable.

1040. FLIGHT PERFORMANCE REQUIREMENTS

1. Purpose. To become familiar with aircraft limitations and emergency procedures. To develop proficiency in servicing, loading, in-flight procedures, and knowledge of safety regulations that pertain to operations and maintenance. To become familiar with SAR procedures and requirements.

2. General

a. Personnel shall complete the Naval Aircrewman Candidate School, and Rappel Indoctrination Course prior to commencement of flight training. All crew chiefs will be required to fly the entire syllabus.

b. Crew chiefs that are current in model H-46 helicopter will be programmed to fly the complete program of instruction, regardless of qualifications. All flights shall be flown with a designated NATOPS Instructor.

c. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

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

e. Aircrews shall fly events annotated with an "NVG" with Night Vision Goggles for the entire flight. Aircrews may fly events with "(NVG)" with the option of using NVG's.

f. All flights annotated with an "E" shall be evaluated per T&R Manual, Volume 1, Chapter 6, Paragraph 6001.c.

3. Refly Interval. Figure 10-1 shows refly interval and Mission Readiness Percentage for MOS 6172.

4. Aircrew Evaluation Flights. All crew chiefs are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-600 or RQD-601).

b. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.

5. Aircrew Coordination. Aircrews shall include aircrew coordination techniques as part of their brief.

1041. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. Familiarize the trainee with HH-46 operations and procedures.

b. General. These flights may be flown on any flight of the pilot syllabus.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (1 Flight, 1.5 Hours)

FAM-l00 1.5 C 1 ACFT

Goal. Introduce HH-46 emergency procedures, characteristics, and discuss crew coordination.

Requirement. CC instructs the CCUI in the duties of the crew chief, to include daily inspection, look-out and turn-around procedures. The trainee should accompany the crew chief during the daily and turn-around inspections. Discuss emergency procedures to include engine fire in-flight and on the ground, fuselage fire in-flight and on the ground, emergency landings (land and water), and smoke elimination. The CCUI will act in the capacity of the crew chief.

2. Internal Loads

a. Purpose. Review procedures for the loading and securing of cargo and personnel.

b. General. These flights may be flown with any flight where internal cargo or passengers are carried.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (1 Flight, 1.5 Hours)

INT-120 1.5 1 ACFT

Goal. Review procedures for cargo loading and unloading; passenger loading, unloading, and briefing procedures; and safety procedures.

Requirement. Review procedures for loading and unloading the extended range fuel tank and tank hook-up procedures. Observe and assist the crew chief in loading and unloading cargo and passengers. Review emergency landing/ditching procedures.

2. Night Familiarization

a. Purpose. Familiarize the trainee with HH-46 night operations and procedures.

b. General. These flights may be flown with any night flight of the pilot syllabus.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (1 Flight, 1.5 Hours)

NFAM-130 1.5 1 ACFT N

Goal. Review the operation of all aircraft lighting systems. To introduce the use and operation of the SX-16 Nitesun.

Requirement. While acting as the crew chief, demonstrate proficiency in the operation of the aircraft lighting systems and employ the Nitesun in SAR operations.

1042. MISSION READY TRAINING

1. Confined Area Landings

a. Purpose. Review crew chief duties when landing in confined areas.

b. General. These flights may be flown with confined area landing (CAL) flights of the pilot syllabus.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (2 Flights, 3.0 Hours)

CAL-200 1.5 1 ACFT

Goal. To review CAL operations.

Requirement. Acting as the crew chief, demonstrate proficiency in the crew coordination requirements of CAL operations. Emphasize clearance of the aircraft during takeoff and landings.

CAL-201 1.5 1 ACFT N

Goal. Review night confined area landings.

Requirement. Acting as the crew chief, demonstrate proficiency in the crew coordination requirements of CAL operations. Emphasize clearance of the aircraft during night takeoffs and landing.

2. External Loads

a. Purpose. Review procedures used when carrying cargo externally.

b. General. These flights may be flown with external load flights in the pilot syllabus.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (1 Flight, 1.0 Hours)

EXT-220 1.0 1 ACFT

Goal. Review cargo hook and external load hook-up procedures, loss of ICS procedures, and water bucket operations. Review emergency external disconnect procedures.

Requirement. CCUI assists the crew chief in external load operations and reviews static discharge precautions. Instruct CCUI in emergency disconnect procedures. Act in capacity of the crew chief.

1043. MISSION QUALIFICATION TRAINING

1. Search and Rescue

a. Purpose. Familiarize the trainee with the search and rescue (SAR) mission, aircraft limitations, and emergency procedures. To develop proficiency in servicing, loading, in-flight procedures, SAR procedures and requirements, and knowledge of safety regulations.

b. General

(1) The T&R Manual, Volume 1, addresses the commanding officer's authority to modify this training as required. Personnel will complete the appropriate NAMTRAGRUDET and NATOPS ground school syllabus, prior to commencing of the flight training syllabus. A NATOPS instructor will monitor the trainee's progress during the flight training syllabus.

(2) Local commands are granted the authority to designate crew chiefs in model upon completion of the flights listed in paragraph 1043.1.b.3 with the addition of NAV-300.

(3) Prerequisite. The following flights of the HH-46 crew chief syllabus shall be satisfactorily completed prior to commencing the SAR qualification training phase (6 Flights, 8.5 Hours):

(a) FAM-l00.

(b) INT-120.

(c) NFAM-130.

(d) CAL-220 and CAL-201.

(e) EXT-220.

c. Ground Training. Additional ground training requirements for all SAR crew chiefs are as follows:

(1) Utilization and limitations of SAR equipment.

(2) Search and rescue techniques.

(3) Ground to air signals to include body, panel, and lighting signals, and international ground to air emergency codes.

d. Crew Requirement. CCI/CCUI.

e. Flight Training (13 Flights, 20.0 Hours)

NAV-300 2.0 1 ACFT

Goal. Fly an extended navigation flight and introduce search patterns.

Requirement. Assist the crew chief and review "away from base" refueling and supply requisitioning procedures. Assist the pilot in flying various search patterns.

SAR-303 1.5 1 ACFT

Goal. Conduct day maritime SAR approach training.

Requirement. Acting as a crew chief, demonstrate the duties during day manual and coupled Doppler approaches. Review standard ICS voice communications. Introduce and discuss flare deployment and vertigo. Demonstrate and introduce the crew chief's remote hover coupler station. Complete a minimum of 2 day manual and 2 day coupled approaches.

SAR-304 1.5 1 ACFT

Goal. Conduct day hoisting with the rescue strop, and the rescue litter, the medevac litter, the rescue net and the hoisting vest (if available).

Requirement. Acting as a crew chief, introduce inland SAR procedures per NWP 19-1, demonstrate the deployment and recovery procedures of the rescue strop, demonstrate deployment and recovery of the rescue litter, the medevac litter, the rescue net, and the hoisting vest in a confined area. Review standard ICS voice communications and safety procedures. Demonstrate the use of the quick splice and the Chicago grip. Review hand and arm signals.

SAR-305 1.5 1 ACFT

Goal. Conduct day swimmer deployments and recoveries with the rescue litter, rescue strop, and rescue net.

Requirement. Acting as a crew chief, review deployment/ recovery of rescue swimmer per NWP 19-1 and local SOP. Deploy and recover the rescue swimmer and simulated survivor(s) using the rescue litter, the medevac litter, and the rescue net. Review standard ICS voice communications, hand signals, and safety procedures. Review operation of the remote hover coupler station. Perform a short-haul operation.

Ordnance. 1 Mk-58 Flares.

SAR-306 1.5 1 ACFT

Goal. Introduce SAR rappelling.

Requirement. Complete a minimum of two standard rappels, one rappel short-haul, and one hoist short-haul.

Prerequisite. Completion of the HS-1 rappel school.

SAR-307 1.5 1 ACFT

Goal. Conduct SAR hoist training from a boat or ship.

Requirement. Discuss normal and emergency procedures related to shipboard hoisting operations. Introduce crew coordination, equipment utilization with emphasis on the trail-line assembly, and the rescue/medevac litter. Review operation of the remote hover coupler station.

SAR-308 1.5 1 ACFT

Goal. Conduct day hoisting with rescue devices using the internal winch through the rescue hatch (hell hole) and over the ramp.

Requirement. Review SAR-304. Acting as a crew chief, review inland SAR procedures per NWP 19-1. Demonstrate the deployment and recovery of rescue devices through the rescue hatch (hell hole) and over the ramp in a confined area. Review standard ICS voice communications and safety procedures. Review hand and arm signals.

SAR-320 1.5 1 ACFT N

Goal. Participate in night land hoisting. Conduct night hoistings with the rescue strop, the rescue litter and the rescue net.

Requirement. Acting as the crew chief, demonstrate hand signals, the deployment and recovery of the rescue strop, rescue litter and medevac litter in a confined area.

SAR-321 1.5 1 ACFT N

Goal. Conduct night maritime SAR and SAR approach training.

Requirement. Discuss night Doppler approach pattern, deployment of the swimmer at night, night light signals from a deployed swimmer, flare deployment, and electrical and Doppler failure. Conduct manual and coupled approaches. Complete a

minimum of 2 manual and 2 coupled Doppler approaches. Use of the remote hover coupler station.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-323 1.5 1 ACFT N

Goal. Drop a full flare pattern and complete a minimum of two night manual and two night coupled Doppler approaches.

Requirement. Review SAR-303. Acting as a crew chief, introduce procedures for dropping a full flare pattern and standard ICS voice communications during night manual and night coupled Doppler approaches. Review the use of the crew chief's remote hover coupler station.

Ordnance. Eight Mk-58 Flares.

SAR-326 1.5 1 ACFT N

Goal. Conduct night swimmer deployments and recoveries with the rescue litter, the rescue strop, and with the rescue net.

Requirement. Acting as the crew chief, deploy and recover the rescue swimmer and the simulated survivor(s) using the rescue litter, the medevac litter and the rescue net. Review standard ICS voice communications, hand/arm signals, and safety procedures. Demonstrate the use of chemical lights and chemical light straps.

Ordnance. 2 Mk-25/1 Mk-58 Flares

SAR-327 1.5 1 ACFT N

Goal. Conduct night SAR hoist training from a boat or ship.

Requirement. Discuss normal and emergency procedures related to shipboard hoisting operations. Introduce crew coordination, equipment utilization with emphasis on the trail-line assembly, and the rescue/medevac litter.

SAR-328 1.5 1 ACFT (N)

Goal. Participate in a SAREX.

Requirement. Acting as the crew chief, participate in a SAREX. Review standard ICS voice communications, hand/arm signals, and safety procedures. Demonstrate the use of chemical lights and chemical light straps. Review operation of the remote hover coupler station.

Ordnance. 3 Mk-58 Flares.

2. Night Vision Goggle (NVG) Operations

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns using NVG's.

b. Safety. Rappels, hoists, and short-hauls shall not be conducted while any crewmember is using NVG's.

c. Crew Requirement. CCNSSI/RACUI.

d. Flight Training (1 Flight, 1.5 Hours)

NVG-330 1.5 1 ACFT N NVG

Goal. Introduce NVG low work and touch & go landings in ambient light conditions of .0022 LUX or greater.

Requirement

(1) Introduce wear and use of NVG's during low work and touch and go landings.

(2) Brief/Discuss

(a) Use and limitations of NVG's.

(b) NVG tube/battery failures.

(c) Lookout doctrine.

(d) Obstacle clearance.

(e) Emergency procedures.

1044. FULL-MISSION QUALIFICATION TRAINING

1. Night Vision Goggle (NVG) Operations

a. Purpose. Continue to develop proficiency required to safely conduct basic operations, navigation, and search patterns using NVG's. These flights should be conducted in ambient light conditions less than .0022 LUX.

b. Safety. Rappels, hoists, and short hauls shall not be conducted while any crewmember is using NVG's.

c. Crew Requirement. CCNSSI/CCUI.

d. Flight Training (2 Flights, 2.0 Hours)

NVG-400 1.0 1 ACFT N NVG

Goal. Develop proficiency in conducting confined area landings and land SAR operations while using NVG's.

Requirement

(1) Introduce. Confined area landings.

(2) Brief/Discuss

(a) Obstacle clearance.

(b) Terrain suitability.

(c) Emergency procedures.

(3) Conduct. Land SAR operations.

NVG-401 1.0 1 ACFT N NVG

Goal. Develop proficiency with NVG's during SAR operations.

Requirement. Introduce the use of NVG's while conducting search patterns for maritime SAR.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

2. Carrier Qualification

a. Purpose. Qualify during day and night unaided/NVG shipboard landings.

b. General. Training includes FCLP/CQ NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. The benefits of NVG operations cannot be over emphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (NSQ).

(1) Refer to appropriate NATOPS Manual for carrier operations.

(2) Minimum of 5 approaches for each CQ flight.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (6 Flights, 9.0 Hours)

FCLP-420 1.5 1 ACFT

Goal. Day carrier pattern familiarization.

Requirement. Introduce day FCLP patterns, approaches, landings, emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching, and aircraft lighting.

FCLP-421 1.5 1 ACFT N

Goal. Night unaided carrier pattern familiarization.

Requirement. Introduce night unaided FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching, and aircraft lighting.

FCLP-422 1.5 1 ACFT N NVG

Goal. NVG carrier pattern familiarization.

Requirement. Introduce NVG FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, crew comfort levels, situational awareness, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching, and aircraft lighting. Crew Requirement. CCNSSI/CCUI.

CQ-423 1.5 1 ACFT

Goal. Day carrier qualification.

Requirement. Discuss aircrew coordination, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching, and aircraft lighting. Introduce day carrier qualification per NATOPS.

CQ-424 1.5 C 1 ACFT N

Goal. Night carrier qualification.

Requirement. Discuss aircrew coordination, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching and other aircraft emergencies relative to the night shipboard environment, aircraft lighting, and night alternate pattern. Introduce night carrier qualification per NATOPS.

CQ-425 1.5 1 ACFT NVG

Goal. NVG CQ's

Requirement. Introduce NVG CQ patterns, approaches, landings, and emergency procedures particular to shipboard operations. Discuss height over various decks, LSE signals, etc. Crew Requirement. CCNSSI/CCUI.

1050. INSTRUCTOR UNDER TRAINING FLIGHT PERFORMANCE REQUIREMENTS

1. Instructor Under Training (IUT)

a. Purpose. Standardize the procedures qualifying syllabus instructors within individual units.

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).

c. Crew Requirements. CCI/CCIUT.

d. Prerequisites. Full-Mission Qualification Stage complete.

e. Flight Training (3 Flights, 4.5 Hours)

FAM-500 1.5 E 1 ACFT

Goal. Demonstrate instructional techniques during day FAM/CAL/INT sorties.

Requirement. Demonstrate instructional techniques in crew responsibilities during preflight, start, taxi, takeoff, in-flight emergency procedures, ICS procedures, and confined area landings.

EXT-502 1.5 E 1 ACFT

Goal. Demonstrate instructional techniques during external cargo operations.

Requirement. Demonstrate instructional techniques in crew responsibilities emphasizing lookout doctrine, crew coordination, ICS procedures, and obstacle clearance.

SAR-503 1.5 E 1 ACFT (N)

Goal. Demonstrate Instructional Techniques during SAR operations.

Requirement. Demonstrate instructional techniques in crew responsibilities during SAR operations emphasizing crew coordination, ICS procedures, obstacle clearance and hoist operation.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

1051. SPECIAL FLIGHT PERFORMANCE REQUIREMENTS

1. Requirements, Qualifications, and Designations

a. Purpose. Ensure standardization of HH-46 crew chief in normal operations, emergency and SAR procedures.

b. General. RQD-600 is an annual OPNAVINST 3710.7_ requirement. Once an aircrewman becomes SAR designated, RQD-601 becomes the annual requirement.

c. Crew Requirement. CCI/CCUI.

d. Flight Training (2 Flights, 3.5 Hours)

RQD-600 1.5 E 1 ACFT (N)

Goal. NATOPS Evaluation.

Requirement. Perform a flight per the HH-46 NATOPS Flight Manual.

RQD-601 2.0 E 1 ACFT (N)

Goal. SAR Evaluation.

Requirement. The crew chief will demonstrate the ability to satisfactorily perform all tasks outlined in the NATOPS. The check ride shall cover all aspects of the local SAR mission. A NATOPS instructor will evaluate the trainee's performance.

1060. EXPENDABLE ORDNANCE REQUIREMENTS

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
Mk-25 Flares			4	2		2	9
Mk-58 Flares			14	1		1	14

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Manual, Volume 1, Appendix A, page 4.

AIRCRAFT: HH-46 (SAR) MOS: 6172 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	l00	1.5	*	10.0					1 ACFT
INT	120	1.5	*	10.0					1 ACFT
NFAM	130	1.5	*	10.0					1 ACFT N
MISSION READY TRAINING									
CAL	200	1.5	C	3.0					1 ACFT
	201	1.5	C	4.0					1 ACFT N
EXT	220	1.0	C	3.0					1 ACFT
MISSION QUALIFICATION TRAINING									
NAV	300	2.0	C	0.5					1 ACFT
SAR	303	1.5	C	0.5					1 ACFT
	304	1.5	C	1.0					1 ACFT
	305	1.5	6	1.0					1 ACFT
	306	1.5	C	0.5					1 ACFT
	307	1.5	6	1.0					1 ACFT
	308	1.5	C	1.0					1 ACFT
	320	1.5	C	1.0					1 ACFT N
	321	1.5	C	1.0					1 ACFT N
	323	1.5	*	1.0					1 ACFT N
	326	1.5	6	1.5					1 ACFT N
	327	1.5	6	1.5					1 ACFT N
	328	1.5	C	1.5					1 ACFT (N)
NVG	330	1.5	6	2.0					1 ACFT N, NVG
FULL-MISSION QUALIFICATION TRAINING									
NVG	400	1.0	6	5.0					1 ACFT N, NVG
	401	1.0	6	6.0					1 ACFT N, NVG
FCLP	420	1.5	C	0.5					1 ACFT
	421	1.5	C	0.5					1 ACFT N
	422	1.5	C	1.0					1 ACFT N, NVG
CQ	423	1.5	C	0.5					1 ACFT
	424	1.5	C	0.5					1 ACFT N
	425	1.5	C	1.0					1 ACFT N, NVG
INSTRUCTOR UNDER TRAINING FLIGHT PERFORMANCE REQUIREMENTS									
FAM	500	1.5	N/A	N/A				X	1 ACFT
EXT	502	1.5	N/A	N/A				X	1 ACFT
SAR	503	1.5	N/A	N/A				X	1 ACFT (N)

Figure 10-1.--MOS 6172 Refly Interval, Mission Readiness Percentage

AIRCRAFT: HH-46 (SAR) MOS: 6172 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
SPECIAL FLIGHT PERFORMANCE REQUIREMENTS									
RQD	600	1.5	C	N/A				X	1 ACFT (N)
	601	2.0	C	N/A				X	1 ACFT (N)

Figure 10-1.--MOS 6172 Refly Interval, Mission Readiness Percentage (Cont)

MOS 6172 FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
CAL	200	
	201	200
EXT	220	
NAV	300	
SAR	303	
	304	
	305	300,303,304
	306	
	307	300,304
	308	304
	320	304,306
	321	303
	323	303,321
	326	304,305,320,321
	327	303,304,307,320,321
	328	
NVG	330	
NVG	400	200,300,304,330
	401	300,301,303,330
FCLP	420	
	421	420
	422	330,420
CQ	423	420
	424	420,421,422,423
	425	330,420,422,423

Figure 10-2.--MOS 6172 Flight Update Chaining.

CHAPTER 11

HH-46 (SAR) RESCUE AIRCREWMAN

*** * N O T E * ***

Aircrews shall include aircrew coordination techniques as part of their brief.

CHAPTER 11

HH-46 (SAR) RESCUE AIRCREWMAN

1100. PROGRAMS OF INSTRUCTION (POI) FOR BASIC, CONVERSION, AND REFRESHER RESCUE AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Naval Aircrew Candidate School	NAS Pensacola
6-9	Rescue Swimmer School	NAS Pensacola
10	HS-1 Rappel Indoctrination Course	HS-1, NAS Jacksonville
11-12	Squadron Ground Training	MCAS
13-25	Flight Training	MCAS

1110. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Naval Aircrew Candidate School	NAS Pensacola
Rescue Swimmer School	NAS Pensacola
HS-1 Rappel Indoctrination Course	NAS Jacksonville
Cardiopulmonary Resuscitation Training	MCAS

1111. SQUADRON LEVEL TRAINING

NATOPS, NWP 19-1, and applicable SAR Publications
Local Geography, Landmarks, and Medical Facilities
Local SAR Organizations
Ordnance Safety
Flight Safety
Squadron and Air Station SOP's

1120. FLIGHT TRAINING FOR BASIC, CONVERSION, AND REFRESHER RESCUE AIRCREWMAN. SAR Rescue Aircrewman who are current in model H-46 helicopter will be programmed to fly the complete program of instruction, regardless of qualifications. All flights shall be flown with a designated NATOPS Instructor.

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	30.0
Familiarization	2	3.0	12.0
Internal loads	2	3.0	12.0
Night Familiarization	1	1.5	6.0
Total	**5**	**7.5**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Confined Area Landings (CAL)	**2**	**3.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search and Rescue (SAR)	13	19.5	14.0
Night Vision Goggle (NVG) Operations	1	1.0	1.0
Total	**14**	**20.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggles	2	2.0	12.0
Carrier Qualification	2	3.0	3.0
Total	**4**	**5.0**	**15.0**
Total	**25**	**36.0**	**100.0**

5. Special Flight/Simulator Performance Requirements

Requirements, Qualifications, and Designations	**1**	**3.0**

1130. SIMULATOR TRAINING. None.

1140. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Purpose. Promote standardization of Rescue Aircrewman procedures and to establish a minimum training program for personnel assigned as rescue aircrewman aboard SAR aircraft.

2. General

a. Personnel shall complete the CNO/CMC approved Naval Aircrew Candidate School, and Rescue Swimmer School prior to commencement of flight training.

b. All swimmer aircrew members shall comply with the training requirements as set forth in NAVAIR 01-250NDB-l and OPNAVINST 3710.7_.

c. SAR rescue aircrewman flights may be flown in conjunction with any pilot flight.

d. All personnel shall complete the HS-1 Rappel Indoctrination Course prior to commencing any rappel operations.

e. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

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

g. Aircrews shall fly events annotated with an "NVG" with Night Vision Goggles for the entire flight. Aircrews may fly events with "(NVG)" with the option of using NVG's.

h. All flights annotated with an "E" shall be evaluated per T&R Manual, Volume 1, Chapter 6, Paragraph 6001.c.

4. Refly Interval. Figure 11-1 shows refly interval and Mission Readiness Percentage for SAR Rescue Aircrewman.

5. Aircrew Evaluation Flights. All Rescue Aircrewmen are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-601).

b. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.

3. Aircrew Coordination. Aircrews shall include aircrew coordination techniques as part of their brief.

1141. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. Familiarize the trainee with HH-46 operations and procedures.

b. Crew Requirement. CCI/RACUI.

c. Flight Training (2 Flights, 3.0 Hours)

FAM-l00	1.5	1 ACFT

Goal. Introduce HH-46 characteristics.

Requirement. Introduce the duties of the rescue aircrewman to include preflight, nomenclature, equipment inventories, lookout doctrine and postflight.

FAM-101	1.5	1 ACFT

Goal. Introduce emergency procedures.

Requirement. Review preflight, nomenclature, equipment inventories, lookout doctrine, and postflight. Introduce emergency procedures including ground and in-flight fires, ditching, emergency landings (land and water), and egress procedures.

2. Internal loads

a. Purpose. Train the rescue aircrewman in passenger and cargo operations.

b. Crew Requirement. CCI/RACUI.

c. Flight Training (2 Flights, 3.0 Hours)

INT-120	1.5	1 ACFT

Goal. Conduct loading, tiedown, and unloading of cargo and extended range fuel tank.

Requirement. Introduce cargo loading and unloading and safety regulations. Instruct in procedures for loading and unloading the extended range fuel tank and tank hook-up procedures.

INT-121 1.5 1 ACFT

Goal. Conduct loading and unloading of passengers.

Requirement. Introduce passenger loading and unloading procedures and passenger briefing procedures. Instruct in emergency landing and ditching procedures.

3. Night Familiarization

a. Purpose. Develop proficiency in operations during conditions of darkness.

b. General

(1) Familiarization maneuver descriptions may be found in the NATOPS Manual.

(2) Night familiarization flight shall be flown at least 30 minutes after official sunset.

c. Crew Requirements. CCI/RACUI.

d. Flight Training (1 Flight, 1.5 Hours)

NFAM-130 1.5 1 ACFT N

Goal. Introduce night landings.

Requirement. Introduce the operation of aircraft lighting systems and night lookout responsibilities. A minimum of three night landings and night taxi directing are required for completion of the event.

1142. MISSION READY TRAINING

1. Confined Area Landings

a. Purpose. Train the rescue aircrewman in his duties when landing in confined areas and provide experience in confined area hoisting.

b. Crew Requirements. CCI/RACUI.

c. Flight Training (2 Flights, 3.0 Hours)

CAL-200 1.5 1 ACFT

Goal. Introduce confined area landings.

Requirement. Introduce CAL procedures and look-out doctrine. Discuss crew coordination and communications responsibilities. Complete a blade walk-around emphasizing blade clearance and obstacle avoidance in the landing zone.

CAL-201 1.5 1 ACFT N

Goal. Introduce night CAL's.

Requirement. Emphasize proper look-out procedures and obstacle clearance. Conduct a minimum of two static hoist operations and three CAL's.

1143. MISSION QUALIFICATION TRAINING

1. Prerequisites. Completion of the Familiarization, Confined Area Landings, and Internal Loads stages of training.

2. Search and Rescue

a. Purpose. Train the Rescue Aircrewman in his duties as a lookout and SAR rescue aircrewman.

b. Crew Requirements. RACI/RACUI.

c. Flight Training (13 Flights, 19.5 Hours)

SAR-303 1.5 1 ACFT

Goal. Introduce SAR and approach procedures.

Requirement. Review search procedures including patterns, scanning techniques, and remote coupler operation. Conduct two day manual, and two day coupled approaches. Emphasize crew coordination and look-out doctrine. Introduce manual override of the hoist and cargo winch. Demonstrate use of the remote hover station.

SAR-304 1.5 1 ACFT

Goal. Introduce hoist operations.

Requirement. Review all previous instruction. Discuss hoist system failures. Introduce taxi directions and procedures and hoist operations, and use the remote hover station.

SAR-305 1.5 1 ACFT

Goal. Introduce day jumps and recoveries using the survival rescue strop (SRS) and rescue net.

Requirement. Conduct 3 day jumps and recoveries using the SRS, rescue net, and one short haul. Discuss safety procedures during deployment, recovery, and reentry. Review hand and arm signals.

Ordnance. 1 Mk-58 Flares.

SAR-306 1.5 1 ACFT

Goal. Introduce helicopter rappelling.

Requirement. Discuss rappel rigging, hookup, short haul techniques, signals, and safety considerations. Emphasize

crew coordination and communication requirements. Conduct a minimum of three rappel descents.

SAR-307 1.5 1 ACFT

Goal. Introduce boat hoists employing a rescue MEDEVAC litter.

Requirement. Review hoist procedures, use of the quick splice, the Chicago grip, the hand and arm signals, and emergency procedures. Complete a minimum of two boat hoists with the rescue devices with trail line procedures as rescue swimmer on the deck.

SAR-308 1.5 1 ACFT (N)

Goal. Introduce hoist operations over the ramp/rescue hatch.

Requirement. Review SAR-304. Acting as a rescue swimmer, review inland SAR procedures per NWP 19-1. Demonstrate the deployment and recovery of rescue devices through the rescue hatch (hell hole) and over the ramp in a confined area. Review standard ICS voice communications and safety procedures. Review hand and arm signals.

SAR-309 1.5 1 ACFT

Goal. Participate in a land SAR exercise.

Requirement. safety procedures, short haul techniques, and signals. While participating in a land SAR exercise, one tree extraction, and recover a survivor. Emphasize crew coordination during ground search and radio reporting procedures.

SAR-310 1.5 1 ACFT

Goal. Introduce day jumps and recoveries using the rescue/ medevac litter.

Requirement. Discuss boat operations and procedures, the use of the trail line assembly, and safety procedures during deployment, recovery and reentry. Review hand and arm signals. Conduct 3 day jumps and recoveries using the Stokes/medical litter.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-320 1.5 1 ACFT N

Goal. Participate in a night land SAR exercise.

Requirement. While participating in a night SAR exercise, conduct a ground search, and recover a survivor. Emphasize crew coordination during ground search and radio reporting procedures.

SAR-321 1.5 1 ACFT N

Goal. Introduce night Doppler approaches.

Requirement. Discuss the night Doppler pattern. Conduct a minimum of two manual and two coupled approaches. Introduce the use of Aldis lamp and night light signals. Discuss flare nomenclature, arming, storage, and deployment procedures. Introduce search operations utilizing the Nitesun. Deploy a minimum of three flares. Review use of the remote hover station.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-326 1.5 1 ACFT N

Goal. Conduct night hoists and recoveries.

Requirement. Conduct 2 night hoists and recoveries using the SRS and rescue net. Discuss safety procedures during deployment, recovery, and reentry. Review night hand and arm signals.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-328 1.5 1 ACFT (N)

Goal. Participate in a SAR exercise.

Requirement. Review all previously introduced SAR techniques. During a SAR exercise, conduct multiple SAR operations as randomly selected by the pilot in command. Emphasize proper assessment of the situation and pick-up procedures. A minimum of two survivor pickups is required for completion of this exercise.

Ordnance. 3 Mk-58 Flares.

SAR-329 1.5 1 ACFT N

Goal. Perform night hoists and recoveries.

Requirement. Conduct 2 night hoists and recoveries employing the rescue/medevac litter. Discuss in-water and hook-up procedures.

Ordnance. 2 Mk-25/1Mk-58 Flares.

3. Night Vision Goggle (NVG) Operations

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns utilizing NVG's.

b. Safety. Rappels, hoists, and short hauls shall not be conducted while any crewmember is using NVG's.

c. Crew Requirement. CCNSSI/RACUI/O.

d. Flight Training (1 Flight, 1.0 Hours)

NVG-330 1.0 1 ACFT N

Goal. Introduce NVG low work and touch and go landings in ambient light conditions greater than .0022 LUX.

Requirement

(1) Introduce. Wear and use of NVG's during low work and touch and go landings.

(2) Brief/Discuss

(a) Use and limitations of NVG's.

(b) NVG tube/battery failures.

(c) Lookout doctrine.

(d) Obstacle clearance.

(e) Emergency procedures.

1144. FULL-MISSION QUALIFICATION TRAINING

1. Night Vision Goggles

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns utilizing NVG's.

b. Safety. Rappels, hoists, and short hauls shall not be conducted while any crewmember is using NVG's.

c. Crew Requirement. CCNSSI/RACUI/O.

d. Flight Training (2 Flights, 2.0 Hours)

NVG-400 1.0 1 ACFT N NVG

Goal. Develop proficiency in conducting confined area landings and land SAR operations utilizing NVG's.

Requirement

(1) Introduce. Confined area landings.

(2) Brief/Discuss

(a) Obstacle clearance.

(b) Terrain suitability.

(c) Emergency procedures.

NVG-401 1.0 1 ACFT N NVG

Goal. Develop proficiency with NVG's during maritime SAR operations.

Requirement. Introduce the use of NVG's while conducting search patterns for maritime SAR.

Ordnance. 2 Mk-25/1 Mk-58 Flares.

2. Carrier Qualification

a. Purpose. Qualify during day and night unaided/NVG shipboard landings.

b. General. Training includes FCLP/CQ NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. The benefits of NVG operations cannot be overemphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (NSQ).

(a) Refer to appropriate NATOPS Manual for carrier operations.

(b) Minimum of 5 approaches for each CQ flight.

c. Crew Requirement. CCNSSI/RACUI.

d. Flight Training (2 Flights, 3.0 Hours)

FCLP-422 1.5 1 ACFT N NVG

Goal. NVG carrier pattern familiarization.

Requirement. Introduce NVG FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, crew comfort levels, situational awareness, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching, and aircraft lighting.

CQ-425 1.5 1 ACFT N NVG

Goal. NVG CQ's

Requirement. Introduce NVG CQ patterns, approaches, landings, and emergency procedures particular to shipboard operations. Discuss height over various decks, LSE signals, etc.

1150. INSTRUCTOR UNDER TRAINING FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Reserved for future use.

1151. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Requirements, Qualifications, and Designations

a. Purpose. Qualify the trainee for designation as a SAR rescue aircrewman or to complete the annual NATOPS evaluation.

b. Prerequisite. Completion of all previous flights and 50 flight hours.

c. Flight Training (1 Flight, 3.0 Hours)

RQD-601 3.0 E 1 ACFT N

Goal. NATOPS evaluation.

Requirement. A NATOPS instructor will evaluate the rescue aircrewman's performance per criteria established in the NATOPS Flight Manual and applicable SAR publications. A simulated water multiple rescue with one active, one passive, and one free floating survivor should be accomplished.

1160. EXPENDABLE ORDNANCE REQUIREMENTS

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
Mk-25 Flares			8	2	10		8
Mk-58 Flares			8	1	9		8

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Manual Volume 1, Appendix A, page 4.

AIRCRAFT: HH-46 (SAR) MOS: N/A CREW POSITION: RESCUE AIRCREWMAN

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	l00	1.5	*	6.0					1 ACFT
	101	1.5	*	6.0					1 ACFT
INT	120	1.5	*	6.0					1 ACFT
	121	1.5	*	6.0					1 ACFT
NFAM	130	1.5	*	6.0					1 ACFT N
MISSION READY TRAINING									
CAL	200	1.5	6	5.0					1 ACFT
	201	1.5	6	5.0					1 ACFT N
MISSION QUALIFICATION TRAINING									
SAR	303	1.5	C	0.5					1 ACFT
	304	1.5	C	0.5					1 ACFT
	305	1.5	6	2.0					1 ACFT
	306	1.5	3	0.5					1 ACFT
	307	1.5	6	1.0					1 ACFT
	308	1.5	C	0.5					1 ACFT (N)
	309	1.5	6	1.0					1 ACFT
	310	1.5	6	2.0					1 ACFT
	320	1.5	6	1.0					1 ACFT N
	321	1.5	C	0.5					1 ACFT N
	326	1.5	6	2.0					1 ACFT N
	328	1.5	C	0.5					1 ACFT (N)
	329	1.5	6	2.0					1 ACFT N
NVG	330	1.0	6	1.0					1 ACFT N
FULL-MISSION QUALIFICATION TRAINING									
NVG	400	1.0	6	6.0					1 ACFT N, NVG
	401	1.0	6	6.0					1 ACFT N, NVG
FCLP	422	1.5	C	1.5					1 ACFT N, NVG
CQ	425	1.5	C	1.5					1 ACFT N, NVG
SPECIAL FLIGHT PERFORMANCE REQUIREMENTS									
RQD	601	3.0	C	N/A				X	1 ACFT N

Figure ll-l.--Rescue Aircrewman Refly Interval, Mission Readiness Percentage.

RESCUE AIRCREWMAN UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
CAL	200	
	201	200
SAR	303	
	304	
	305	
	306	
	307	
	308	
	309	304
	310	303,304,305
	320	304,306,309
	321	303
	326	303,304,320,321
	328	
	329	
NVG	330	
NVG	400	200,304,306,330
	401	303,330
FCLP	422	330
CQ	425	330,422
RQD	601	

Figure 11-2.--Rescue Aircrewman Flight Update Chaining.

CHAPTER 12

HH-46 (SAR) SAR MEDICAL TECHNICIAN

*** * N O T E * ***

Aircrews shall include aircrew coordination techniques as part of their brief.

CHAPTER 12

HH-46 (SAR) SAR MEDICAL TECHNICIAN

1200. PROGRAMS OF INSTRUCTION (POI) INITIAL AND REFRESHER SAR MEDICAL TECHNICIAN

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Naval Aircrewman Candidate School	NAS Pensacola
6	Rappel Indoctrination Course	HS-1 NAS Jacksonville
7-9	Ground Training	MCAS
10-18	Flight Training	MCAS

1201. POI FOR REFRESHER SAR MEDICAL TECHNICIAN

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground Training	MCAS
3-11	Flight Training	MCAS

1210. GROUND TRAINING COURSES OF INSTRUCTION

COURSE	ACTIVITY
Naval Aircrewman Candidate School	NAS Pensacola
Emergency Medical Technician Training	Naval Hospital
I.V. Certification Training	Naval Hospital
Cardiopulmonary Resuscitation Certification	Naval Hospital
Basic Trauma Life Support Training	Naval Hospital
Rappel Indoctrination Course	HS-1, NAS JAX

1211. SQUADRON LEVEL TRAINING

NATOPS Flight Manual and Crew Chief NATOPS Pocket Checklist
Safety Publications
Survival and Rescue Equipment
Utilization and Limitations of SAR Equipment
Ground to Air Signals
Search and Rescue Techniques
Squadron Standard Operating Procedures (SOP's)
Ordnance Safety
Utilization of SAR Medical Equipment

1220. FLIGHT TRAINING (POI) FOR INITIAL AND REFRESHER SAR MEDICAL TECHNICIAN.

SAR Medical Technicians will be programmed to fly the complete program of instruction, regardless of qualifications. All flights shall be flown with a designated NATOPS Instructor.

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	30.0
Familiarization	2	2.0	12.0

Internal Loads	2	2.0	12.0
Night Familiarization	1	1.0	6.0
Total	**5**	**5.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Confined Area Landings	2	3.0	6.0
External Loads	1	1.0	4.0
Total	**3**	**4.0**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Medical Evacuation	1	2.0	1.0
Search and Rescue (SAR)	11	16.5	12.5
Night Vision Goggle	1	1.0	1.5
Total	**13**	**19.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Night Vision Goggles	2	2.0	12.0
Carrier Qualification	2	3.0	3.0
Total	**4**	**5.0**	**15.0**
Total for Initial and Refresher SAR Medical Technician	**25**	**33.5**	**100.0**

1230. SIMULATOR TRAINING. Not applicable.

1240. FLIGHT PERFORMANCE REQUIREMENTS

1. Purpose. Promote standardization of SAR medical technician (SARMT) procedures and to establish a minimum training program for those personnel assigned as an SAR medical technician aboard the HH-46.

2. General

a. Personnel shall complete the Naval Aircrewman Candidate School, and Rappel Indoctrination Course prior to commencement of flight training.

b. All flights shall terminate with a comprehensive debrief with emphasis on the aircrew's performance using all evaluation techniques.

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

d. Aircrews shall fly events annotated with an "NVG" with Night Vision Goggles for the entire flight. Aircrews may fly events with "(NVG)" with the option of using NVG's.

e. All flights annotated with an "E" shall be evaluated per T&R Manual, Volume 1, Chapter 6, Paragraph 6001.c.

3. Refly Interval. Figure 12-1 shows refly interval and Mission Readiness Percentage for NEC 8401.

4. Aircrew Evaluation Flights. All SARMTs are required to have a NATOPS evaluation form filled out annually upon completion of the following:

a. NATOPS Check (RQD-601).

b. Any flight in the mission qualification, mission ready, or full mission qualification phase as recommended by the Squadron Standardization Board.

5. Aircrew Coordination. Aircrews shall include aircrew coordination techniques as part of their brief.

1241. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. Familiarize the trainee with HH-46 operations and procedures.

b. General. These flights may be flown on any appropriate flight of the pilot syllabus.

c. Crew Requirements. SARMTI/SARMTUI.

d. Flight Training (2 Flights, 2.0 Hours)

FAM-100 1.0 1 ACFT

Goal. Introduce HH-46 characteristics.

Requirement. Introduce the duties of the SAR medical technician to include preflight procedures, nomenclature, equipment inventory, look-out doctrine, and postflight procedures. The trainee shall accompany the SAR medical technician during a preflight and postflight inspection.

FAM-l0l 1.0 1 ACFT

Goal. Conduct emergency training.

Requirement. Introduce emergency procedures to include all ground and in-flight fires, ditching, emergency landings, and egress procedures.

2. Internal Loads

a. Purpose. Introduce the SARMT to loading and unloading procedures.

b. Crew Requirements. SARMTI/SARMTUI.

c. Flight Training (2 Flights, 2.0 Hours)

INT-120 1.0 1 ACFT

Goal. Introduce loading, tiedown, and unloading of cargo and extended range fuel tank.

Requirement. Instruct in procedures for cargo loading and unloading and safety requirements. Introduce procedures for loading and unloading the extended range fuel tank and tank hook-up procedures.

INT-121 1.0 1 ACFT

Goal. Introduce passenger loading and unloading procedures.

Requirement. Introduce passenger manifesting, loading and unloading, and passenger safety briefing procedures.

3. Night Familiarization

a. Purpose. Familiarize the trainee with HH-46 night operations and procedures.

b. General. These flights may be flown on any appropriate night flight of the pilot syllabus.

c. Crew Requirements. SARMTI/SARMTUI.

d. Flight Training (1 Flight, 1.0 Hours)

NFAM-130 1.0 1 ACFT N

Goal. Introduce the trainee to operation of all aircraft lighting systems.

Requirement. Review look-out doctrine. Instruct in the use of all aircraft lighting systems and the CX-16 Nitesun and discuss electrical system malfunctions.

1242. MISSION READY TRAINING

1. Confined Area Landings (CAL)

a. Purpose. Instruct the trainee in his duties when landing in confined areas.

b. General. These flights may be flown on any flight of the pilot confined area landing stage.

c. Crew Requirements. SARMTI/SARMTUI.

d. Flight Training (2 Flights, 3.0 Hours)

CAL-200 1.5 1 ACFT

Goal. Introduce confined area landing look-out doctrine.

Requirement. Receive instruction in look-out doctrine, crew coordination (emphasizing blade clearance), and obstacle avoidance in the landing area.

CAL-201 1.5 1 ACFT N

Goal. Introduce night CAL's.

Requirement. Demonstrate proper lookout, obstacle clearance, and communications procedures while conducting night CAL's. A minimum of three CAL's are required for completion.

2. External Loads

a. Purpose. Review procedures used when carrying cargo externally.

b. General. These flights may be flown with external load flights in the pilot syllabus.

c. Crew Requirements. SARMTI/SARMTUI.

d. Prerequisite. Assist in at least five external pick-up/releases.

e. Flight Training (1 Flight, 1.0 Hours)

EXT-220 1.0 1 ACFT

Goal. Introduce external operations/water bucket operations.

Requirement. Demonstrate proper look-out doctrine, obstacle clearance, and communication procedures during external operations. Introduce aircraft pre-flight/external hook-up procedures, and BAMBI bucket preflight and assembly and general operation.

1243. MISSION QUALIFICATION TRAINING

1. Aeromedical Evacuation

a. Purpose. Instruct the trainee in standard procedures for conducting areomedical evacuation and operations away from the local base.

b. Crew Requirements. SARMTI/SARMTUI.

c. Flight Training (1 Flight, 2.0 Hours)

MEDEVAC-300 2.0 1 ACFT

Goal. Introduce procedures for medical evacuation; introduce extended navigation and area hospital FAM.

Requirement. Perform an actual/simulated medical evacuation to an airport/hospital facility away from the local base. Emphasize rigging of the aircraft litters, use of aircraft radios in relaying patient information to the destination medical facility, and use of the aircraft utility electrical power supply. Introduce extended navigation procedures, refueling away from base, area hospitals, and their medical capabilities/locations.

2. Search and Rescue (SAR)

a. Purpose. Introduce the trainee in standard procedures for conducting search and rescue operations.

b. General. These flights may be flown on any appropriate flight of the pilot search and rescue stage.

c. Crew Requirements. SARMTI/SARMTUI.

d. Flight Training (11 Flights, 16.5 Hours)

SAR-303 1.5 1 ACFT

Goal. Introduce Doppler approaches.

Requirement. Introduce Doppler approach procedures and voice communications between crewmembers during a minimum of two manual and two coupled approaches. Introduce and discuss flare arming and dearming, safety procedures, and deployment. Introduce operating the remote hover station.

SAR-304 1.5 1 ACFT

Goal. Introduce overland hoist operations.

Requirement. Conduct SARMT deployment and recovery. Complete a minimum of 2 day hoists with rescue devices. Demonstrate the use of the quick splice and Chicago grip. Review hand and arm signals and hoisting emergency procedures.

SAR-305 1.5 1 ACFT

Goal. Participate in a day water SAR exercise.

Requirement. Brief the impact of sea state and weather on swimmer deployment method. Conduct swimmer deployment short haul, recovery of swimmer and survivor(s), and swimmer assistance. Review hand and arm signals and hoisting emergency procedures. Use remote hover station.

Ordnance. 1 Mk-58 Flares.

SAR-306 1.5 1 ACFT

Goal. Conduct helicopter rappelling.

Requirement. Discuss rappel rigging, hookup, short haul techniques, signals, and safety considerations. Emphasize crew coordination and communication requirements. Conduct a minimum of two rappel descents, and one rappel via short haul.

SAR-307 1.5 1 ACFT

Goal. Introduce boat hoists employing the rescue/medevac litter.

Requirement. Review hoist procedures, the use of the quick splice, the Chicago grip, hand and arm signals, and emergency procedures. Complete a minimum of 2 day shipboard hoists with

the rescue devices with trailline procedures, as SARMT on the deck. Use remote hover station.

SAR-308 1.5 1 ACFT

Goal. Introduce hoist operations over the ramp/rescue hatch.

Requirements. Review SAR-304. Acting as the SARMT, review inland SAR procedures per NWP 19-1. Demonstrate the deployment and recovery of rescue devices through the rescue hatch (hell hole) and over the ramp in a confined area. Review standard ICS voice communications and safety procedures. Review hand and arm signals.

SAR-309 1.5 1 ACFT

Goal. Participate in a day land SAREX.

Requirement. Brief overland SAR procedures, search patterns, and hand and arm signals. Conduct tree extractions of survivor(s) per NWP 19-1. Discuss diagnosis and treatment of survivor(s), and the briefing of pilots on the condition of survivor(s) and recommended actions.

SAR-320 1.5 1 ACFT N

Goal. Participate in a night land SAREX.

Requirements. Brief overland SAR procedures, placement of chemlites on rescue devices, search patterns, and night/low visibility signals. Conduct night ground rescue procedures with stokes/MEDEVAC litter, and trail line procedures.

SAR-323 1.5 1 ACFT N

Goal. Introduce SAR flare pattern searches.

Requirement. Introduce procedures and voice communications requirements between crewmembers during night coupled and manual doppler approaches. Drop a full flare pattern and complete a minimum two manual and two coupled approaches. Introduce night flare deployment procedures. Review the use of the remote hover station. Discuss vertigo and review night emergency procedures.

Ordnance. 8 Mk-58 Flares.

SAR-326 1.5 1 ACFT N

Goal. Participate in a night water SAR exercise.

Requirement. Participate in a night water SAREX. Conduct swimmer deployment and recovery. Review night/low visibility signals. Use remote hover station. Discuss placement of chemlites on rescue devices and hand and arm signals. Discuss swimmer signals (hand, Aldis lamp, and chemlights).

Ordnance. 2 Mk-25/1 Mk-58 Flares.

SAR-328 1.5 1 ACFT (N)

Goal. Conduct SAREX.

Requirement. Launch on a simulated night SAREX (Land or water). Review previous SAREX procedures. Brief overland SAR procedures, search patterns, and night/low visibility signals. Discuss diagnosis and treatment of survivor(s), the briefing of pilots on the conditions of survivor(s), and recommended actions.

Ordnance. 3 Mk-58 Flares.

3. Night Vision Goggle (NVG) Operations

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns utilizing NVG's.

b. General. Rappels, hoists and short hauls shall not be conducted while any crewmember is using NVG's.

c. Prerequisite. Completion of NVG NITE lab.

d. Crew Requirements. CCNSSI/SARMTUI.

e. Flight Training (1 Flight, 1.0 Hours)

NVG-330 1.0 1 ACFT N NVG

Goal. Introduce NVG low work and touch and go landings under ambient light conditions of .0022 LUX or greater.

Requirement. Introduce wear and use of NVG's during low work and touch and go landings. Brief/discuss the following: Use and limitations of NVG's, NVG tube/battery failures, lookout doctrine, obstacle clearances, and emergency procedures.

1244. FULL-MISSION QUALIFICATION TRAINING

1. Night Vision Goggle (NVG) Operations

a. Purpose. Develop proficiency required to safely conduct basic operations, navigation, and search patterns using NVG's. These flights should be conducted in ambient light conditions less than .0022 LUX.

b. General. Rappels, hoists and short hauls shall not be conducted while any crewmember is using NVG's.

c. Prerequisite. Completion of NVG NITE lab.

d. Crew Requirements. CCNSSI/SARMTUI.

e. Flight Training (2 Flights, 2.0 Hours)

NVG-400 1.0 1 ACFT N NVG

Goal. Develop proficiency in conducting night land SAR operations while using NVG's.

Requirement. Introduce confined area landings/hoisting operations with NVG's. Brief/Discuss the following: obstacle clearances, terrain suitability, and emergency procedures.

NVG-401 1.0 1 ACFT N NVG

Goal. Develop proficiency with NVG's during night overwater SAR operations.

Requirement. Introduce the use of NVG's while conducting search patterns for maritime SAR.

Ordnance. 2 Mk-25/1Mk-58 Flares.

2. Carrier Qualification

a. Purpose. Qualify during day and night unaided/NVG shipboard landings.

b. General. Training includes FCLP/CQ NVG operations. Extended searches may require shipboard operations for refueling, casualty recovery, and/or remote site launches. The benefits of NVG operations cannot be over emphasized, and every effort should be made to ensure all crewmembers are SAR Night Systems Qualified (NSQ).

(1) Refer to appropriate NATOPS Manual for carrier operations.

(2) Minimum of 5 approaches for each CQ flight.

c. Crew Requirements. SARMTI/SARMTUI.

d. Flight Training (2 Flights, 3.0 Hours)

FCLP-422 1.5 1 ACFT N NVG

Goal. NVG carrier pattern familiarization.

Requirement. Introduce NVG FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Discuss aircrew coordination, crew comfort levels, situational awareness, verbal/visual communications used during shipboard landings, LSE signals, water landing/ditching, and aircraft lighting.

CQ-425 1.5 1 ACFT N NVG

Goal. NVG CQ's

Requirement. Introduce NVG CQ patterns, approaches, landings, and emergency procedures particular to shipboard operations. Discuss height over various decks, LSE signals, etc.

1250. INSTRUCTOR UNDER TRAINING FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS. Reserved for future use.

1251. SPECIAL FLIGHT PERFORMANCE REQUIREMENTS

1. Requirements, Qualification, and Designations

a. Purpose. To qualify the trainee for designation as a SARMT or to complete the annual NATOPS evaluation.

b. Prerequisite

(1) Completion of all previous flights.

(2) Minimum of 50 flight hours for initial SARMT.

c. Crew Requirements. SARMTI/SARMTUI.

d. Flight Training (1 Flight, 2.0 Hours)

RQD-601 2.0 E 1 ACFT (N)

Goal. NATOPS qualification evaluation.

Requirement. A NATOPS instructor will grade the trainee's performance per the NATOPS Flight Manual, OPNAVINST 3710.7_, and applicable SAR and medical publications.

1260. EXPENDABLE ORDNANCE REQUIREMENTS

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	ANNUAL*
Mk-25 Flares			4	4	4	N/A	3
Mk-58 Flares			15	2	12	N/A	10

* Annual Ordnance requirements maintain an aircrew member at 85% MRP per T&R Manual, Volume 1, Appendix A, page 4.

AIRCRAFT: HH-46 (SAR) NEC: 8401 CREW POSITION: SAR MEDICAL TECHNICIAN

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	T	C	R	E	REMARKS
MISSION CAPABLE TRAINING									
FAM	100	1.0	*	6.0					1 ACFT
	lOl	1.0	*	6.0					1 ACFT
INT	120	1.0	*	6.0					1 ACFT
	121	1.0	*	6.0					1 ACFT
NFAM	130	1.0	*	6.0					1 ACFT N
MISSION READY TRAINING									
CAL	200	1.5	6	3.0					1 ACFT
	201	1.5	6	3.0					1 ACFT N
EXT	220	1.0	*	4.0					1 ACFT
MISSION QUALIFICATION TRAINING									
MEDEVAC	300	2.0	C	1.0					1 ACFT
SAR	303	1.5	C	0.5					1 ACFT
	304	1.5	C	0.5					1 ACFT
	305	1.5	6	2.0					1 ACFT
	306	1.5	1	0.5					1 ACFT
	307	1.5	6	1.0					1 ACFT
	308	1.5	C	0.5					1 ACFT
	309	1.5	6	2.0					1 ACFT
	320	1.5	6	2.0					1 ACFT N
	323	1.5	*	0.5					1 ACFT N
	326	1.5	6	2.0					1 ACFT N
	328	1.5	C	1.0					1 ACFT (N)
NVG	330	1.0	6	1.5					1 ACFT N NVG
FULL-MISSION QUALIFICATION TRAINING									
NVG	400	1.0	6	6.0					1 ACFT N NVG
	401	1.0	6	6.0					1 ACFT N NVG
FCLP	422	1.5	C	1.5					1 ACFT N NVG
CQ	425	1.5	C	1.5					1 ACFT N NVG
SPECIAL FLIGHT PERFORMANCE REQUIREMENTS									
RQD	601	2.0	C	N/A				X	1 ACFT (N)

Figure 12-1.--NEC 8401 Refly Interval, Mission Readiness Percentage.

NEC 8401 FLIGHT UPDATE CHAINING

FLIGHT	FLIGHT UPDATED	
CAL	200	
	201	200
EXT	220	
MEDEVAC	300	
SAR	303	
	304	
	305	303
	306	304
	307	
	308	304
	309	304
	320	309
	323	303
	326	303,305
	328	
NVG	330	
NVG	400	200,304,306,309,330
	401	303,304,305,326
FCLP	422	330
CQ	425	330,422
RQD	601	

Figure 12-2.--NEC 8401 Flight Update Chaining.

CHAPTER 13

UH-1N (SAR) PILOT

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 12

UH-1N (SAR) PILOT

1300. PROGRAMS OF INSTRUCTION (POI) FOR CONVERSION SAR PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground School	SOMS
2-3	Mission Ready Training	SOMS
4-7	Mission Qualification Training	SOMS
8	Full Mission Qualification Train	SOMS

1301. POI FOR REFRESHER SAR PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground School	SOMS
2-3	Mission Ready Training	SOMS
4-5	Mission Qualification Training	SOMS
6	Full Mission Qualification	SOMS

1302. POI FOR INSTRUCTOR SAR PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Instructor Training	SOMS
1	Phase I NVGI Training	SOMS

1303. POI FOR SPECIAL FLIGHTS

WEEKS	COURSE/PHASE	ACTIVITY
N/A	Annual Evaluation Flights	SOMS
1	Formation Flight	SOMS
2	Night Vision Goggle Flights	SOMS

1304. PREREQUISITES. Naval aviators assigned to UH-1N SAR billets shall be NATOPS qualified in model and preferably second tour UH-1 pilots. Aviators who are not qualified in model shall complete the appropriate combat capable training at the FRS as set forth in Chapter 6, MCO P3500.16.

1310. GROUND TRAINING COURSES OF INSTRUCTION

COURSE/PHASE	ACTIVITY
NITELAB	MAWTS-1

1311. SQUADRON LEVEL TRAINING

Aircraft Systems
Emergency Procedures
Weight, Balance, and Performance Data
All Weather Operations

Communications
Passenger Briefing
Local Course Rules
Aircrew Coordination and Responsibilities
NATOPS Open and Closed Book Examinations
Search Planning
SAR Equipment and Techniques
SAR Publications
SC, SMC, OSC, and SRU Responsibilities
Command SAR Plans and SOP
Night Operations Course

1320. FLIGHT TRAINING: CONVERSION SAR PILOT

1. Mission Capable Training. See paragraph 1304.

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
NATOPS Qualification	-	-.-	60.0
Familiarization	2	3.0	2.0
Instruments	1	1.5	1.0
Navigation	2	3.0	2.0
Search and Rescue	3	4.5	3.0
SAR Check	1	1.5	2.0
Total	**9**	**13.5**	**70.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Confined Area Landings	2	3.0	1.0
Search and Rescue	14	20.0	13.0
Navigation	2	4.0	1.0
Total	**18**	**27.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
SAR HAC Check	**3**	**4.5**	**15.0**
Total for Conversion Pilot	**30**	**45.0**	**100.0**

1321. REFRESHER SAR PILOT

1. Mission Capable Training. See paragraph 1304.

2. Mission Ready Training

STAGE	FLIGHTS	HOURS
NATOPS Qualification	-	-.-
Familiarization	2	3.0
Instruments	1	1.5
Navigation	2	3.0

SAR Check	1	1.5
Total	**6**	**9.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS
Confined Area Landings	2	3.0
Search and Rescue	8	12.0
Navigation	2	4.0
Total	**12**	**19.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR HAC Check	**2**	**3.0**
Total for Refresher Pilot	**20**	**31.0**

1322. INSTRUCTOR UNDER TRAINING (IUT)

STAGE	FLIGHTS	HOURS
Familiarization	1	1.0
Instrument/Navigation	1	1.0
Confined Area Landings/SAR	1	1.0
Total	**3**	**3.0**

1323. SPECIAL FLIGHTS TRAINING

STAGE	FLIGHTS	HOURS
Annual Evaluation Flights	2	3.0
Formation Flight	1	1.5
Night Vision Devices	8	12.0
Total	**11**	**16.5**

1330. SIMULATOR TRAINING. Not applicable unless an approved UH-1N Instrument Trainer is available. Those flights which may be flown are indicated by an "S".

1340. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Currently UH-1N Qualified. When assigned to a UH-1N SAR billet, a naval aviator who is currently UH-1N NATOPS qualified shall complete the Conversion POI unless previously UH-1N (SAR) qualified.

b. Prior UH-1N (SAR) Qualified. When assigned to a UH-1N SAR billet, a naval aviator who is currently UH-1N NATOPS qualified, and who was previously UH-1N (SAR) qualified shall complete the refresher POI.

c. Not Currently UH-1N Qualified. When assigned to a UH-1N SAR billet, a naval aviator who is not currently UH-1N NATOPS qualified shall complete conversion or refresher training at the FRS, as set forth in MCO P3500.16, Chapter 6, then complete the appropriate POI as set forth above.

d. Progression. PUI should complete all events in each phase before progressing (i.e., 100 series complete, then 200 series complete, etc.).

e. Pilots **shall** fly events annotated with an "NS" with Night Vision Goggles, for the entire flight. Minimum crew includes a qualified Aerial Observer for all events annotated with an "NS". Pilots **may** fly events annotated with "(NS)" with the option of using NVG's.

2. Crew Requirement/Position Indicators. Each flight stage description indicates which SAR crewmembers are required and in which seat the PUI and IP will sit: e.g., PUI/IP (PUI left seat, IP right seat) or IP/PUI/CC/RA (IP left seat, PUI right seat, crew chief and rescue aircrewman required).

3. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

1341. MISSION READY TRAINING

1. General

a. Training conducted during the Mission Ready Phase should concentrate on preparing the PUI to serve as a copilot during actual SAR missions. PUI should complete all 200 series events before commencing 300 series phase.

b. Prior to flight, the PUI shall have completed the NATOPS open book examination within the previous 12 months.

c. Prior to SARX-240, a locally prepared reading list which shall include appropriate sections from the NATOPS manual, NWP 19-1, NWP-19, NWP 55-8-SAR, the unit SOP, and other locally pertinent publications shall be completed.

2. Familiarization

a. Purpose. To review flight characteristics, aircraft systems, limitations, emergency procedures and local course rules. To refine proficiency in all maneuvers contained in the familiarization stage.

b. General. Prior to FAM-200, conduct a thorough preflight/postflight inspection and cockpit familiarization to include blindfold cockpit check (emphasize SAR peculiar equipment). Flights will terminate with an instrument approach where practical.

c. Crew Requirement. PUI/IP/CC.

d. Flight Training (2 Flights, 3.0 Hours)

FAM-200	1.5	C,R 1 ACFT

Goal. Review normal procedures, basic CAL techniques, and introduce local course rules.

Requirement

(1) Introduce. Local course rules.

(2) Review. Start/Shutdown, normal takeoffs/landings, no hover takeoffs/landings, sliding takeoffs/landings, steep/precision approaches, power checks, wave-offs, high speed approaches, quick stops, tail rotor malfunctions, autorotations, low work, hover/taxi autorotations, engine failure, and use of checklists.

(3) Brief/Discuss. Selected emergency procedures, weight and balance, crew coordination, power checks, and course rules. Emphasize copilot responsibilities during confined area and mountainous operations.

FAM-201 1.5 C,R 1 ACFT N

Goal. Review normal procedures, basic CAL techniques and course rules at night.

Requirement

(1) Review. FAM-200 at night.

(2) Brief/Discuss. Night course rules and electrical failures.

3. Instruments

a. Purpose. To maintain proficiency in instrument flight skills and to introduce instrument procedures applicable to the local mission.

b. General. Instrument flights, whether day or night, should be conducted under actual conditions where practical or hooded in the case of simulated instrument flight.

c. Crew Requirement. PUI/IP/QO.

d. Flight Training (1 Flight, 1.5 Hours)

INST-210 1.5 C,R (S) 1 ACFT (N)

Goal. Review instrument procedures applicable to the local area.

Requirement

(1) Review. Flight planning, basic airwork, climbs/descents, navigation procedures, holding, instrument approaches (precision and nonprecision), and equipment use.

(2) Brief/Discuss. FLIP documents & local instrument procedures (emphasizing those applicable to actual SAR missions) and emergency procedures applicable to instrument flight.

4. Navigation

a. Purpose. To become familiar with navigation in the local mission area during day and night operations.

b. Crew Requirement. PUI/IP.

c. Flight Training (2 Flights, 3.0 Hours)

NAV-220 1.5 C,R 1 ACFT

Goal. Introduce the PUI to navigational procedures in the local operating area.

Requirement

(1) Introduce. Hospitals, roads, training sites, and other landmarks in the local operating area.

(2) Review. Use of UHF-DF.

(3) Brief/Discuss. UHF-DF, maps, charts, and other aids to navigation in the local operating area. Emphasize the effects of weather and other variables on navigation.

NAV-221 1.5 C,R 1 ACFT N

Goal. Introduce navigation in the local mission area at night.

Requirement. Repeat NAV-220 at night.

5. Search and Rescue (SAR)

a. Purpose. To introduce basic SAR techniques and practice the copilot's duties during search and rescue operations.

b. Crew Requirement. PUI/IP/CC/RA

c. Flight Training (3 Flights, 4.5 Hours)

SAR-230 1.5 C 1 ACFT

Goal. Introduce basic search patterns, local air ambulance, and airfield mishap procedures.

Requirement

(1) Introduce

(a) Contour, trackline, creeping line, parallel, sector, and square search patterns.

(b) Procedures for airfield mishaps and other local air ambulance missions.

(2) Brief/Discuss. Basic search patterns, copilot's duties during air ambulance operations, aircraft equipment, local communications procedures, and other mission response/execution procedures.

SAR-231 1.5 C 1 ACFT

Goal. Introduce rappel, hoist and short haul operations.

Requirement

(1) Introduce. Copilot's duties during rappel, hoist, and short haul operations.

(2) Review. Any 2 search patterns.

(3) Brief/Discuss. Procedures for rappel, hoist, and short haul operations including emergency procedures.

SAR-232 1.5 C 1 ACFT N

Goal. Introduce copilot's duties during rappel, hoist and short haul operations at night.

Requirement

(1) Introduce. Techniques for standoff lighting while hovering and HOGE operations from the left seat.

(2) Review. SAR-231 at night practicing 2 different search patterns.

(3) Brief/Discuss. Lighting for night searches and rescues.

6. SAR Check

a. Purpose. To review all previous areas of instruction and evaluate the PUI's ability to perform copilot duties during search and rescue operations. Prior to H2P designation pilots shall be NATOPS qualified (i.e., PQM).

b. Crew Requirement. PUI/IP/CC/RA.

c. Flight Training (1 Flight, 1.5 Hours)

SARX-240 1.5 C,R E 1 ACFT (N)

Goal. SAR evaluation flight.

Requirement. PUI must demonstrate a thorough knowledge of the aircraft systems, emergency procedures, normal operating procedures from the left seat, and basic search and rescue procedures. Emphasize copilot responsibilities during all maneuvers.

1342. MISSION QUALIFICATION TRAINING

1. Confined Area Landings (CAL)

a. Purpose. To refine proficiency in confined and mountainous area flight techniques.

b. Crew Requirement. IP/PUI/CC.

c. Flight Training (2 Flights, 3.0 Hours)

CAL-300 1.5 C,R 1 ACFT

Goal. Practice confined and mountainous area landings.

Requirement

(1) Review

(a) Power checks, one skid landings, downwind landings, slope landings, minimum rotor clearance approaches, and HOGE at 50-150 feet AGL.

(b) Approach planning, precision/obstacle approaches, max power takeoffs, crosswind/no-hover landings, waveoffs, power control, area navigation, and landing zone selection/ identification in rough or mountainous terrain (including the use of unprepared landing sites where available).

(2) Brief/Discuss. Crew coordination, power checks, mountain winds, landing site evaluation, power settling, effects of high altitude, turbulent air flight techniques, and weather.

CAL-301 1.5 C,R 1 ACFT N

Goal. Practice confined and mountainous area landings at night.

Requirement

(1) Review. CAL-300 at night and refine the use of aircraft lighting.

(2) Brief/Discuss. Interior and exterior aircraft lighting including the SX-16 Nightsun.

2. Search and Rescue (SAR)

a. Purpose. To develop proficiency in inland search and rescue techniques. To further refine proficiency in confined area and mountainous operations.

b. Crew Requirement. IP/PUI/CC/RA.

c. Flight Training (14 Flights, 20.0 Hours)

SAR-310 1.0 C 1 ACFT

Goal. Introduce rappel operations.

Requirement

(1) Introduce. Rappel operations in a simple environment at 50-150 feet AGL. Emphasize altitude, drift, and yaw control. Perform a minimum of 6 evolutions.

(2) Review. Local area navigation.

(3) Brief/Discuss. Rappel procedures, technique, and emergency procedures.

SAR-311 1.0 C 1 ACFT

Goal. Introduce hoist operations.

Requirement

(1) Introduce. Hoist operations in a simple environment at 50-150 feet AGL. Emphasize altitude, drift, and yaw control. Perform a minimum of 3 evolutions.

(2) Review. Local area navigation.

(3) Brief/Discuss. Hoist procedures, technique, and emergency procedures.

SAR-312 1.5 C,R 1 ACFT

Goal. Practice combined rappel and hoist operations.

Requirement

(1) Review

(a) Combined rappel and hoist operations as dictated by local geographical conditions. Conduct operations at 50-150 feet AGL in a simple environment. Emphasize altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(b) Local area navigation.

(2) Brief/Discuss. Procedures for combined rappel and hoist operations.

SAR-313 1.5 C,R 1 ACFT N

Goal. Practice combined rappel and hoist operations at night.

Requirement

(1) Review. SAR-312 at night.

(2) Brief/Discuss. Illumination techniques including standoff lighting.

SAR-314 1.5 C 1 ACFT

Goal. Introduce rappel and hoist operations in rough terrain.

Requirement

(1) Introduce. Rappel & hoist techniques in mountainous and very confined areas (including ravines & pinnacles where practical). Conduct operations at 50-150 feet AGL, simulating realistic conditions while emphasizing altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(2) Review. One skid landings, slope landings, minimum rotor clearance approaches, and power checks.

(3) Brief/Discuss. Mountainous area flying techniques applicable local communications procedures and other factors affecting rappel & hoist maneuvers in rough terrain.

SAR-315 1.5 C 1 ACFT N

Goal. Introduce rappel and hoist operations in rough terrain at night.

Requirement. Review SAR-314 at night.

SAR-316 1.5 C,R 1 ACFT

Goal. Practice rappel and hoist operations in rough terrain.

Requirement

(1) Review

(a) Rappel and hoist operations in mountainous and very confined areas (including ravines and pinnacles where practical). Conduct operations at 50-150 feet AGL, simulating realistic conditions while emphasizing altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(b) One skid landings, slope landings, minimum rotor clearance approaches, and power checks.

SAR-317 1.5 C,R 1 ACFT N

Goal. Practice rappel and hoist operations in rough terrain at night.

Requirement. Review SAR-316 at night.

SAR-318 1.5 C 1 ACFT

Goal. Introduce rappel and short haul operations.

Requirement

(1) Introduce. Rappel and short haul operations in a simple environment. Emphasize altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(2) Brief/Discuss. Short haul emergency procedures.

SAR-319 1.5 C,R 1 ACFT

Goal. Practice rappel and short haul operations in rough terrain.

Requirement

(1) Review. SAR-318 in rough terrain.

(2) Brief/Discuss. Weather, altitude, aircraft limitations, and other factors affecting short hauls in rough terrain.

SAR-320 1.5 C 1 ACFT N

Goal. Introduce rappel and short haul operations at night.

Requirement. Review SAR-318 at night, emphasizing lighting techniques.

SAR-321 1.5 C,R 1 ACFT N

Goal. Practice rappel and short haul operations in rough terrain at night.

Requirement. Review SAR-319 at night, emphasizing lighting techniques.

SAR-322 1.5 C,R 1 ACFT

Goal. Practice all SAR procedures during a simulated SAR scenario.

Requirement

(1) Review. Using a scenario, practice aerial search patterns, one short haul, one rappel and hoist maneuver, communications, navigation, and all other SAR mission areas.

(2) Brief/Discuss. Search pattern types, air ambulance procedures, communications, and required documentation as required.

SAR-323 1.5 C,R 1 ACFT N

Goal. Practice all SAR procedures during a simulated night SAR scenario.

Requirement. Repeat SAR-322 at night.

3. Navigation

a. Purpose. To become familiar with remote or extended area navigation during day and night operation.

b. Crew Requirement. IP/PUI.

c. Flight Training (2 Flights, 4.0 Hours)

NAV-330 2.0 C,R 1 ACFT

Goal. Familiarize the PUI with remote portions of the unit's area of responsibility or locations outside the area where missions are frequently conducted during daylight.

Requirement. Navigate to remote locations as dictated by local unit requirements.

NAV-331 2.0 C,R 1 ACFT N

Goal. Familiarize the PUI with remote portions of the unit's area of responsibility or locations outside the area where missions are frequently conducted at night.

Requirement. Navigate to remote locations as dictated by local unit requirements at night.

1343. FULL MISSION QUALIFICATION TRAINING

1. SAR HAC Check

a. Purpose. To evaluate proficiency in all flight characteristics peculiar to UH-1N inland search and rescue operations.

b. Crew Requirement. IP/PUI/CC/RA.

c. Flight Training (3 Flights, 4.5 Hours)

HACX-400 1.5 C E 1 ACFT (N)

Goal. SAR HAC evaluation review.

Requirement. Review all SAR procedures, emergency procedures, and normal maneuvers applicable to the local SAR mission.

HACX-401 1.5 C,R E 1 ACFT

Goal. SAR HAC evaluation flight.

Requirement. During a search and rescue scenario(s) the PUI must demonstrate a thorough knowledge of aircraft systems, capabilities, limitations, and emergency procedures. He must demonstrate a working knowledge of the National SAR System and a thorough knowledge of the local SAR mission. The PUI must also possess the ability to operate the aircraft in varying emergency and meteorological conditions (good headwork must be exercised).

HACX-402 1.5 C,R E 1 ACFT N

Goal. Conduct the night portion of the initial SAR HAC evaluation.

Requirement. Repeat HACX-401 at night.

1350. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Qualification. An IUT will be qualified to instruct all flights in a particular stage of training once he has completed the corresponding IUT stage flight.

b. Standardization. Techniques of instruction and standardization will be stressed on all IUT flights. More emphasis should be placed on discussion of standardization criteria and proper procedures than on the actual flying portion of each IUT flight.

c. Roles. The IP will play the role of the PUI and the IUT will instruct to the greatest extent possible on all IUT flights.

d. Crew Requirement. IUT/IP (IUT/IP/CC/RA for IUT-502).

e. Flight Training (3 Flights, 3.0 Hours)

IUT-500 1.0 1 ACFT

Goal. Qualify the IUT to instruct FAM/INST stage flights.

Requirement

(1) Review. All FAM/INST maneuvers with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all FAM/INST maneuvers, standardization criteria, and safety parameters for each.

IUT-501 1.0 1 ACFT

Goal. Qualify the IUT to instruct NAV/CAL stage flights.

Requirement

(1) Review. All NAV/CAL maneuvers with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all NAV/CAL maneuvers, standardization criteria, and safety parameters for each.

IUT-502 1.0 1 ACFT

Goal. Qualify the IUT to instruct SAR stage flights.

Requirement

(1) Review. All SAR maneuvers with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all SAR maneuvers, standardization criteria, and safety parameters for each.

2. Night Vision Devices. Night System Instructor (NSI) training will be conducted per the MAWTS-1 Course Catalog.

1351. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Annual Evaluation Flights

a. Purpose. To conduct annual instrument and NATOPS evaluations.

b. Crew Requirement. IP/HAC/CC and QO for EVAL-600.

c. Flight Training (2 Flights, 3.0 Hours)

EVAL-600 1.5 E (S) 1 ACFT (N)

Goal. Conduct the annual instrument check.

Requirement. Complete the instrument check per current directives. The IP shall be a member of the unit Instrument Flight Board.

EVAL-601 1.5 E 1 ACFT (N)

Goal. Conduct the annual NATOPS evaluation.

Requirement. Complete the NATOPS check per the UH-1N NATOPS manual. This flight may be flown in conjunction with EVAL-600, or HACX-401/402.

2. Formation Flight

a. Purpose. To develop the ability to rendezvous and fly formation maneuvers in support of SAR missions.

b. General. At least one pilot in the flight shall be a designated section leader.

c. Crew Requirement. IP/PUI/CC.

d. Flight Training (1 Flight, 1.5 Hours)

FORM-610 1.5 2 ACFT

Goal. Review formation procedures and maneuvers.

Requirement. Review section takeoffs, parade position, parade turns, climbs and descents, cross-overs, break-up & rendezvous', overruns, lead changes, section landings, cruise position, and scouting line.

3. Night Vision Devices (NVD)(HLL)

a. Purpose. To provide the ability to safely utilize NVD's while conducting search and rescue operations during hours of darkness under High Light Level (HLL) conditions (above .0022 lux) using NVD's.

b. General. The MAWTS-1 Night Operations Course and NITELAB shall be completed prior to conducting NVD flights. The IP shall be a designated Night Systems SAR Instructor (NSSI). Both the crew chief and observer shall be NSQ HHL. At the successful completion of this stage the PUI will NSSQ HLL.

c. Safety

(1) Rappels, hoists, and shorthauls shall not be conducted while any crewmember is wearing NVD's.

(2) Refer to MCO P3500.14, Chapter 9 for NVD policies.

d. Crew Requirement. IP/PUI/CC/O.

e. Prerequisite. SAR-201

f. Flight Training (5 Flights, 7.5 Hours)

NVD-620 1.5 C 1 ACFT NS

Goal. Introduce NVD low work and pattern work.

Requirement

(1) Introduce. The wearing and use of NVD's while performing taxi, basic low work, takeoffs/landings at an unlighted field or remote landing site, quick stops, slide on landings, autorotations (90 degree, 180 degree), single engine failures, and hovering/taxiing autorotations. Minimum of five touch and go landings for completion.

(2) Brief/Discuss. The use of NVD's, goggle and degoggle procedures, NVD battery failure, NVD tube failure, and crew/ cockpit coordination.

Prerequisite. FAM-201

NVD-621 1.5 C,R 1 ACFT NS

Goal. Develop proficiency with NVD's, demonstrate/introduce confined area operations using NVD's.

Requirement

(1) Review. NVD-620

(2) Brief/Discuss. Inadvertent IMC procedures, visual illusions, and night flight techniques.

(3) Demonstrate/Introduce. Confined area approaches, takeoff and landings (to include the application of steep approaches) using NVD's to a lighted or unlit confined area. Use aircraft ground lighting systems; e.g. chemlights.

Prerequisite. NVD-620

NVD-622 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's, demonstrate/introduce mountain area operations using NVD's.

Requirement

(1) Demonstrate. Proficiency with NVD's while conducting CAL operations and navigation procedures.

(2) Introduce. NVD MAL procedures.

(3) Review

(a) Lookout procedures required during navigation and confined area landing. Stress safety procedures, aircraft clearance and terrain effects while using NVD's.

(b) The use of check points, time distance checks, barrier features, prominent terrain features, and map preparation while using NVD's.

(4) Discuss. Slope, grade, and wind considerations, wave-off, and power available versus power required while performing MAL's.

Prerequisite. NVD-621

NVD-623 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's in a HLL environment.

Requirement

(1) Refine. NVD CAL and MAL procedures.

(2) Review. NVD navigational techniques and NVD emergency procedures.

Prerequisite. NVD-622

NVD-624 1.5 C,R E 1 ACFT NS

Goal. Refine crew coordination during a night SAR mission in an HLL environment.

Requirement

(1) Demonstrate. Proficiency in the use of NVD's above .0022 lux.

(2) Review. Procedures for NVD navigation, map preparation, CAL's, MAL's, and NVD emergency procedures.

(3) Brief/Discuss. Crew coordination, comfort levels, situational awareness, and terrain suitability and obstacle clearance.

Prerequisite. NVD-623

4. Night Vision Devices (NVD)(LLL)

a. Purpose. To develop proficiency to conduct operations while using NVD's in the Low Light Level (LLL) environment (below .0022 lux).

b. General

(1) PUI shall be NSSQ HLL.

(2) Upon completion of this stage the PUI will be NSSQ LLL.

c. Ground Training. Review the MAWTS-1 NVD Manual.

d. Crew Requirement. IP/PUI/CC/O

e. Prerequisite. NVD-624

f. Flight Training (3 Flights, 4.5 hours)

NVD-630 1.5 C 1 ACFT NS

Goal. Perform NVD low work and pattern work during low light level conditions.

Requirement

(1) Perform. Basic low work and pattern work.

(2) Brief/Discuss. The use of NVD's during low light level conditions, to include battery failure and crew coordination.

Prerequisite. NVD-624

NVD-631 1.5 C 1 ACFT NS

Goal. Develop proficiency in CAL's, MAL's, and navigation procedures while using NVD's during low light level conditions.

Requirement

(1) Conduct. CAL's, MAL's and navigation flight while using NVD's during low light level conditions.

(2) Brief/Discuss. Comfort levels, map preparation, and crew coordination.

Prerequisite. NVD-630

NVD-632 1.5 C,R E 1 ACFT NS

Goal. To develop proficiency in the low light level environment.

Requirement

(1) Conduct. Simulated SAR mission under low light level environment.

(2) Brief/Discuss. NVD navigation, map preparation, crew coordination, and comfort level.

Prerequisite. NVD-631

1360. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UH-1N (SAR) MOS: 7563 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION READY TRAINING								
FAM	200	1.5	3	1.0	X	X		1 ACFT
	201	1.5	3	1.0	X	X		1 ACFT N
INST	210	1.5	6	1.0	X	X		1 ACFT(N)(S)
NAV	220	1.5	6	1.0	X	X		1 ACFT
	221	1.5	6	1.0	X	X		1 ACFTN
SAR	230	1.5	C	1.0	X			1 ACFT
	231	1.5	3	1.0	X			1 ACFT
	232	1.5	3	1.0	X			1 ACFT N
SARX	240	1.5	C	2.0	X	X	X	1 ACFT (N)
MISSION QUALIFICATION TRAINING								
CAL	300	1.5	1	0.5	X	X		1 ACFT
	301	1.5	1	0.5	X	X		1 ACFTN
SAR	310	1.0	C	0.5	X			1 ACFT
	311	1.0	C	0.5	X			1 ACFT
	312	1.5	6	1.0	X	X		1 ACFT
	313	1.5	6	1.0	X	X		1 ACFT N
	314	1.5	C	1.0	X			1 ACFT
	315	1.5	C	1.0	X			1 ACFT N
	316	1.5	1	1.0	X	X		1 ACFT
	317	1.5	1	1.0	X	X		1 ACFT N
	318	1.5	6	1.0	X			1 ACFT
	319	1.5	1	1.0	X	X		1 ACFT
	320	1.5	6	1.0	X			1 ACFT N
	321	1.5	1	1.0	X	X		1 ACFT N
	322	1.5	3	1.0	X	X		1 ACFT
	323	1.5	3	1.0	X	X		1 ACFT N
NAV	330	2.0	C	1.0	X	X		1 ACFT
	331	2.0	C	1.0	X	X		1 ACFT N
FULL MISSION QUALIFICATION TRAINING								
HACX	400	1.5	C	3.0	X		X	1 ACFT (N)
	401	1.5	C	6.0	X	X	X	1 ACFT
	402	1.5	*	6.0	X	X	X	1 ACFT N
INSTRUCTOR TRAINING								
IUT	500	1.0						1 ACFT
	501	1.0						1 ACFT
	502	1.0						1 ACFT

Figure 13-1.--UH-1N (SAR) Pilot Refly Interval, Mission Readiness Percentage.

AIRCRAFT: UH-1N (SAR) MOS: 7563 CREW POSITION: PILOT

FLIGHT STAGE	TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
SPECIAL FLIGHT TRAINING								
EVAL ACFT(N)(S)	600	1.5	C				X	1
	601	1.5	C				X	1 ACFT (N)
FORM	610	1.5	C					2 ACFT
NVD	620	1.5	6		X			1 ACFT NS
	621	1.5	6		X			1 ACFT NS
	622	1.5	6		X			1 ACFT NS
	623	1.5	6		X			1 ACFT NS
	624	1.5	6		X	X	X	1 ACFT NS
	630	1.5	6		X			1 ACFT NS
	631	1.5	6		X			1 ACFT NS
	632	1.5	C		X	X	X	1 ACFT NS

Figure 13-1.--UH-1N (SAR) Pilot Refly Interval, Mission Readiness Percentage, Continued.

UH-1N (SAR) PILOT FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
FAM	200	
	201	200
INST	210	
NAV	220	
	221	220
SAR	230	
	231	230
	232	230,231
SARX	240	
CAL	300	
	301	300
SAR	310	220
	311	220
	312	310,311
	313	310,311,312
	314	310,311,312
	315	310,311,312,313,314
	316	310,311,312,314,316
	317	310,311,312,313,314,315,316
	318	310
	319	310,318
	320	310,318
	321	310,318,319,320
	322	220,310,311,312,314,318
	323	220,221,310,311,312,313,314,315,318,320,321,322
NAV	330	220
	331	220,221,330
HACX	400	220,310,311,312,314,318,322
	401	220,240,310,311,312,314,318,322,400
	402	220,221,240,310,311,312,313,314,315,318,320,322,323,400,401

Figure 13-2.--UH-1N (SAR) Pilot Flight Update Chaining.

CHAPTER 14

UH-1N (SAR) CREW CHIEF

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 14

UH-1N (SAR) CREW CHIEF

1400. PROGRAMS OF INSTRUCTION (POI) FOR BASIC (SAR) CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1	Rappel School	HC-16
2-3	Ground School	SOMS
4-15	UH-1N Search and Rescue Training	SOMS

1401. POI FOR CONVERSION AND REFRESHER (SAR) CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground School	SOMS
3-12	Search and Rescue Training	SOMS

1402. POI FOR INSTRUCTOR TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1	Instructor Training	SOMS

1403. POI FOR SPECIAL MISSION TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
N/A	Annual Evaluation flight	SOMS
1	Formation flight	SOMS
1	Night Vision Goggle Operations	SOMS

1410. GROUND TRAINING COURSES OF INSTRUCTION. Appropriate NAMTRAGRUDET (if applicable).

NITELAB	MAWTS-1

1411. SQUADRON LEVEL TRAINING

Publications and Related Directives
Survival and First Aid
Communication Procedures
Aircrew Coordination/Responsibilities
Safety
Search and Rescue Equipment
Emergency Procedures
Local Course Rules
Night Operations Course

1420. FLIGHT TRAINING: BASIC (SAR) CREW CHIEF

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-	25.0
Familiarization	5	7.5	12.5
Navigation	4	5.0	10.0
Confined Area Landings	3	4.5	7.5
Instruments	1	1.5	5.0
Total	**13**	**18.5**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Navigation	6	7.0	5.0
Confined Area Landings	5	7.5	5.0
Total	**11**	**14.5**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search and Rescue Training	**18**	**19.0**	**20.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
SAR Crew Chief Check	**2**	**3.0**	**10.0**
Total for Basic (SAR) Crew Chief	**44**	**55.0**	**100.0**

1421. CONVERSION AND REFRESHER (SAR) CREW CHIEF

1. Mission Capable Training

STAGE	FLIGHTS	HOURS
Navigation	**4**	**5.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS
Navigation	6	7.0
Confined Area Landings	4	6.0
Total	**10**	**13.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS
Search and Rescue Training	**18**	**19.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR Crew Chief Check	**2**	**3.0**

Total for Conversion and Refresher Crew Chief	**34**	**40.0**

1422. INSTRUCTOR UNDER TRAINING (IUT)

STAGE	FLIGHTS	HOURS
Familiarization/Navigation/Instrument	1	1.5
Confined Area Landings/Search and Rescue	1	1.5
Total	**2**	**3.0**

1423. SPECIAL MISSION TRAINING

STAGE	FLIGHTS	HOURS
Annual Evaluation Flight	1	1.5
Formation Flight	1	1.5
Night Vision Devices	8	12.0
Total	**10**	**15.0**

1430. SIMULATOR TRAINING. Not applicable.

1440. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. UH-1N Qualified. When assigned to a UH-1N (SAR) billet, a designated Crew Chief (MOS 6174) who holds a current UH-1N NATOPS qualification shall complete the refresher syllabus.

b. Prior UH-1N SAR Qualification. When assigned to a UH-1N (SAR) billet, a designated Crew Chief (MOS 6174) who previously held a UH-1N (SAR) qualification shall complete the refresher syllabus.

c. No Previous UH-1N Qualification. When assigned to a UH-1N (SAR) billet, designated Crew Chiefs (MOS 6172, 6173, 6175) shall complete the basic syllabus along with appropriate plane captain prerequisites.

d. Crew Positions. Certain flights require that the Crew Chief under instruction (CCUI) be in a designated position. Crew position will be indicated on the top line of each flight description; CCUI/ICC e.g., (CCUI will assume the Crew Chief position).

e. Progression. CCUI should complete all stages within each phase before progressing to the next phase.

f. Crew members **shall** fly events annotated with an "NS" with Night Vision Goggles, for the entire flight. Minimum crew includes a qualified Aerial Observer for all events annotated with an "NS". Crew members **may** fly events annotated with "(NS)" with the option of using NVG's.

2. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

1441. MISSION CAPABLE TRAINING

1. General

a. Prior to flight training, the CCUI shall complete the NATOPS open book examination.

b. A locally prepared reading list which shall include appropriate sections from the NATOPS manual, NWP 19, NWP 19-1, NWP 55-8-SAR, the unit SOP, and other locally pertinent publications will be completed prior to CCX-400/401.

2. Familiarization

a. Purpose. To become familiar with the responsibilities of a UH-1N (SAR) Crew Chief to include aircraft flight characteristics, limitations, aircraft systems, and proficiency in assisting the pilots in all aspects of flight.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (5 Flights, 7.5 Hours)

FAM-100 1.5 C 1 ACFT

Goal. To become familiar with the UH-1N.

Requirement

(1) Introduce. Preflight, postflight, start procedures, in-flight emergency procedures, look-out procedures, communication procedures, passenger briefing, and aircraft configuration.

(2) Brief/Discuss. Inflight emergency procedures, SAR area of responsibility, aircraft security, and local field course rules.

FAM-101 1.5 C 1 ACFT

Goal. To become familiar with the UH-1N.

Requirement

(1) Introduce. Crew chief duties to include zone briefs, lookout procedures, and takeoff & landing procedures.

(2) Review. Emergency procedures, aircraft limitations, passenger briefing, and flight characteristics.

(3) Brief/Discuss. In-flight emergency procedures.

FAM-102 1.5 C 1 ACFT

Goal. Become familiar with UH-1N emergency procedures.

Requirement

(1) Introduce. Simulated in-flight emergencies, i.e. autorotations, cut guns, and slide-ons.

(2) Review. All previous FAM work.

FAM-103 1.5 C 1 ACFT N

Goal. To become familiar with UH-1N night operations.

Requirement. Review FAM-101 at night.

FAM-104 1.5 C 1 ACFT N

Goal. To become familiar with the UH-1N emergency procedures at night.

Requirement. Review FAM-102 at night.

3. Navigation

a. Purpose. To become familiar with navigating principles/techniques and become proficient at navigating within the SAR local operating area.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (4 Flights, 5.0 hours)

NAV-110 1.5 C,R 1 ACFT

Goal. Become familiar with local operating area.

Requirement

(1) Introduce. Local hospitals, their landing zones/approach/ departure routes, major highways, and cities.

(2) Brief/Discuss. Map locations of hospitals, surrounding cities, local highways, and outlying communities.

NAV-111 1.5 C,R 1 ACFT

Goal. Become familiar with local confined area landing (CAL) sites.

Requirement

(1) Introduce. Navigation procedures to all local CAL sites to include recognition of major landmarks, ridgelines, canyons etc.

(2) Review. Emergency procedures.

NAV-112 1.0 C,R 1 ACFT N

Goal. Become familiar with the local area at night.

Requirement. Repeat NAV-110 at night.

NAV-113 1.0 C,R 1 ACFT N

Goal. Become familiar with the local confined area landing sites at night.

Requirement. Review NAV-111 at night.

4. Confined Area Landings (CAL)

a. Purpose. To become familiar with operating procedures and techniques within mountainous confined areas.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (3 Flights, 4.5 Hours)

CAL-120 1.5 C 1 ACFT

Goal. To become familiar with confined area landing procedures and mountainous terrain characteristics.

Requirement

(1) Introduce. Proper clearance techniques and lookout procedures during CAL's.

(2) Review. Local CAL site locations by landing in various confined areas.

(3) Brief/Discuss. Mountainous wind characteristics, settling with power, and power settling recognition.

CAL-121 1.5 C 1 ACFT

Goal. Become familiar with CAL procedures.

Requirement

(1) Demonstrate. One-skid and sloped landing procedures.

(2) Review. Normal CAL procedures and locations.

CAL-122 1.5 C 1 ACFT N

Goal. Become familiar with CAL operations at night.

Requirement

(1) Demonstrate. Basic CAL procedures to include zone briefs, approach/departure routes, and waveoff recognition.

(2) Brief/Discuss. HIGE and HOGE procedures and theory.

5. Instruments

a. Purpose. To become familiar with instrument flight and the use of special flight publications.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (1 Flight, 1.5 Hours)

INST-130 1.5 C (S) 1 ACFT (N)

Goal. To become familiar with IFR flight.

Requirement. Introduce the use of IFR/VFR supplements and other documents such as VFR sectionals. Also make several IFR approaches under IFR conditions when possible.

1442. MISSION READY TRAINING

1. Navigation

a. Purpose. To become proficient at advanced navigation technique and procedures within the SAR local & extended areas.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (6 Flights 7.0 Hours)

NAV-200 1.0 C,R 1 ACFT

Goal. Become proficient at navigating within the SAR local operating area.

Requirement

(1) Demonstrate. Effective navigation techniques to local hospitals, surrounding cities, local roads & highways, and outlying communities.

(2) Review. Aircraft limitations and emergency procedures.

(3) Brief/Discuss. Recognition of major landmarks and terrain features used extensively for navigation.

NAV-201 1.0 C,R 1 ACFT

Goal. Become proficient at navigating within the SAR local confined area landing sites.

Requirement

(1) Review

(a) Navigation procedures to all local CAL sites to include recognition of major landmarks, ridgelines, canyons, power lines, etc.

(b) Emergency procedures.

NAV-202 1.5 C,R 1 ACFT

Goal. To become proficient at navigating within the SAR local operating area.

Requirement. Demonstrate proficiency in navigating to all CAL sites and hospitals within the SAR local area.

NAV-203 1.5 C,R 1 ACFT

Goal. Become proficient at navigating within the SAR "extended" operating areas.

Requirement

(1) Introduce. Any extended areas of interest.

(2) Review. The use of the IFR/VFR supplements and maps.

(3) Brief/Discuss. Map locations of extended areas and discuss away from home operations.

NAV-204 1.0 C,R 1 ACFT N

Goal. To become proficient at navigating within the SAR local operating area at night.

Requirement. Repeat NAV-200 at night.

NAV-205 1.0 C,R 1 ACFT N

Goal. To become proficient at navigating within the SAR local confined area landing sites at night.

Requirement. Review NAV-201 during the hours of darkness.

2. Confined Area Landings (CAL)

a. Purpose. To become proficient at confined area landing procedures and techniques.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (5 Flights, 7.5 Hours)

CAL-210 1.5 C,R 1 ACFT

Goal. To become proficient at sloped and one-skid landing responsibilities.

Requirement

(1) Demonstrate. Proficiency during one-skid and slope landings.

(2) Brief/Discuss. Emergency procedures, aircraft limitations, and dynamic rollover characteristics.

CAL-211 1.5 C 1 ACFT

Goal. To become proficient at advanced CAL operations.

Requirement. Demonstrate familiarity with approach/departure routes, CAL sites, specific terrain features, obstacles, waveoffs, and zone briefings. Make landings to all CAL sites when possible.

CAL-212 1.5 C,R 1 ACFT

Goal. To become proficient at advanced CAL operations.

Requirement. Repeat CAL-211.

CAL-213 1.5 C,R 1 ACFT N

Goal. To become proficient at advanced CAL operations at night.

Requirement

(1) Repeat CAL-210 at night.

(2) Introduce the use of the SX-16 night sun search light for zone illumination and discuss it's limitations due to haze.

CAL-214 1.5 C,R 1 ACFT N

Goal. To become proficient at advanced CAL operations.

Requirement. Review CAL-211 at night.

1443. MISSION QUALIFICATION TRAINING

1. Search and Rescue (SAR)

a. Purpose. To develop proficiency in Search and Rescue techniques and procedures.

b. General. Due to local SAR demands the need for specific rescue techniques varies between SAR commands. The two recognized rescue procedures are shorthaul and stokes evolution. As used herein stokes evolution refers to the rappel of the corpsman/rescue aircrewman, egress of the stokes litter, and finally a hoist of either both stokes litter and corpsman, or both separately. Shorthaul herein refers to shorthauling RA, combined RA/Patient, or RA/stokes litter.

c. Ground Training. CCUI will undergo ground training to become familiar with rappelling techniques. This will include a brief of aircraft rigging, shorthaul, and stokes voice procedures. The CCUI will also attend a demonstration of all SAR equipment to be used during this phase of training.

d. Use of Live Victims. While conducting stokes evolutions during this phase of training, the use of "live" victims in the stokes litter is prohibited.

e. Crew Requirement. CCUI/ICC/RA.

f. Flight Training (18 Flights, 19.0 Hours)

SAR-300 1.O C,R 1 ACFT

Goal. To become familiar with conducting aircraft rappelling operations.

Requirement

(1) Demonstrate. ICC demo Rappel Master responsibilities and special safety precautions (Demo at least 4 Rappels).

(2) Brief/Discuss. Aircraft rigging procedures, equipment safety inspection requirements, lost communication procedures, and rappelling emergency procedures.

SAR-301 1.0 C,R 1 ACFT

Goal. To become proficient at Rappel Master techniques and safety responsibilities.

Requirement. Introduce Rappel Master responsibilities by performing 4 CAL site rappels.

SAR-302 1.0 C,R 1 ACFT

Goal. To become familiar with hoisting operations.

Requirement

(1) Introduce. Hoisting procedures. Conduct operations at 50 to 75 feet AGL in a simple environment. Practice Rappel Master techniques by conducting 2 rappels and use the hoist for each pick-up.

(2) Review. CAL site locations and local area navigation.

(3) Brief/Discuss. Rappelling safety procedures, voice procedures, hoist limitations, and emergency procedures while conducting hoist and rappel operations.

SAR-303 1.0 C,R 1 ACFT

Goal. Introduce stokes litter evolution.

Requirement

(1) Introduce. Stokes evolution in a simple environment stressing crew coordination and standardized voice procedures. Conduct a minimum of 5 evolutions. Rappels: 2 at 75', 1 at 100', 1 at 150', and 1 at 200'. Hoists as desired.

(2) Brief/Discuss. Stokes evolution safety precautions, emergency procedures, and ground communication procedures.

SAR-304 1.0 C,R 1 ACFT

Goal. Practice stokes evolution in moderately rough terrain.

Requirement

(1) Review. Stokes evolution in moderately rough terrain.

(2) Brief/Discuss. Jammed hoist, runaway hoist, hoist entanglement procedures, and the use of the quicksplice.

(3) Review. CAL techniques emphasizing one skid and slope landings.

SAR-305 1.0 C,R 1 ACFT

Goal. Refine stokes evolution in moderately rough terrain.

Requirement. Review SAR-304.

SAR-306 1.0 C,R 1 ACFT N

Goal. Introduce stokes evolution at night.

Requirement

(1) Review. SAR-303 at night.

(2) Introduce. The use of the SX-16 night sun searchlight for standoff lighting and pickup point illumination.

SAR-307 1.0 C,R 1 ACFT

Goal. Introduce shorthaul procedures.

Requirement

(1) Introduce. Shorthaul procedures in terrain free of obstacles, stressing crew coordination and standardized voice procedures. Conduct a minimum of 2 evolutions.

(2) Review. CAL site locations and local area navigation.

(3) Brief/Discuss. Single engine failure while performing hover work. Also discuss emergency rope cutting procedures.

SAR-308 1.0 C,R 1 ACFT N

Goal. Introduce stokes evolution in moderately rough terrain at night.

Requirement. Review SAR-304 at night.

SAR-309 1.0 C,R 1 ACFT

Goal. Introduce stokes evolution in rough terrain.

Requirement

(1) Review

(a) Stokes evolution in mountainous and very confined areas (including ravines and pinnacles where practical).

(b) One skid landings, slope landings, and minimum rotor clearances.

(2) Brief/Discuss. Mountain area flying and applicable local communications procedures.

SAR-310 1.0 C,R 1 ACFT N

Goal. Introduce stokes evolution in rough terrain at night.

Requirement. Review SAR-309 at night.

SAR-311 1.0 C,R 1 ACFT

Goal. Practice shorthaul procedures in rough terrain.

Requirement

(1) Review. Shorthaul procedures in rough terrain simulating realistic conditions. Perform a minimum of 2 evolutions. Conduct at least one evolution using cliff or vertical face techniques.

(2) Brief/Discuss. Shorthaul emergency procedures and other factors affecting shorthauls in rough terrain to include cliff or vertical face procedures.

SAR-312 1.0 C,R 1 ACFT

Goal. Practice stokes evolution in rough terrain.

Requirement

(1) Review

(a) Stokes evolution in mountainous and very confined areas. Conduct operations simulating realistic conditions while striving for rapid stokes deployment and minimal A/C movement over pickup point. Perform a minimum of 2 evolutions.

(b) Hoist emergency procedures, belay line control, minimum rotor clearances, and standardized voice procedures.

SAR-313 1.0 C,R 1 ACFT N

Goal. Practice shorthaul procedures in simple terrain at night.

Requirement. Review SAR-307 at night.

SAR-314 1.0 C,R 1 ACFT N

Goal. Practice stokes evolution in rough terrain at night.

Requirement. Review SAR-312 at night.

SAR-315 1.0 C,R 1 ACFT N

Goal. Practice shorthaul procedures in rough terrain at night.

Requirement. Review SAR-311 at night.

SAR-316 1.5 C,R 1 ACFT

Goal. Practice all SAR procedures during a simulated SAR scenario.

Requirement

(1) Brief/Execute. Simulated rescue mission involving 1 shorthaul and 1 stokes evolution in rough terrain. This mission
should include all facets of an actual mission from alert to patient delivery.

(2) Brief/Discuss. All emergency procedures and A/C limitations, air ambulance, and on-scene procedures.

SAR-317 1.5 C,R 1 ACFT N

Goal. Practice all SAR procedures during a simulated night SAR
scenario.

Requirement. Review SAR-315 at night.

1444. FULL-MISSION QUALIFICATION TRAINING

1. Combat Qualification Check

a. Purpose. To certify that the CCUI is capable of executing all missions required of a UH-1N (SAR) crew chief.

b. General. The CCUI shall complete the NATOPS closed book exam and be CPR qualified prior to CCX-400/401.

c. Crew Requirements. CCUI/ICC/RA.

d. Flight Training (2 Flights, 3.0 Hours)

CCX-400 1.5 C,R E 1 ACFT

Goal. Day evaluation flight.

Requirement. CCUI will demonstrate a thorough knowledge of the helicopter systems, emergency procedures, CAL's, MAL's, hoist and rappel operations, rescue procedures, and the ability to perform these events under varying emergency and meteorological conditions. This check will include a simulated mission.

CCX-401 1.5 C,R E 1 ACFT N

Goal. Night evaluation flight.

Requirement. Repeat CCX-400 during the hours of darkness.

1450. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Qualification. An IUT will be considered qualified to instruct all flights in a particular stage of training once he has completed the corresponding IUT flights.

b. Standardization. Techniques of instruction and standardization shall be stressed on all IUT stage flights.

c. Roles. The ICC will play the role of the CCUI and the IUT will instruct to the greatest extent possible on all IUT flights.

d. Crew Requirements. IUT/ICC (IUT/ICC/RA for CSAR-501).

e. Flight Training (2 Flights, 3.0 Hours)

IUT-500 1.5 1 ACFT

Goal. Qualify the IUT to instruct FAM/NAV/INST/CAL stage flights.

Requirement

(1) Review. All FAM/NAV/INST/CAL requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. In-flight emergency procedures, and standardization criterion.

IUT-501 1.5 1 ACFT

Goal. Qualify the IUT to instruct SAR stage flights.

Requirement

(1) Review. All SAR requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all SAR flights with regards to all safety precautions and standardization criterion.

1451. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Annual Evaluation Flight

a. Purpose. To conduct annual NATOPS evaluations.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (1 Flight, 1.5 Hours)

EVAL-600 1.5 E 1 ACFT (N)

Goal. To conduct an annual NATOPS evaluation.

Requirement. Complete the NATOPS evaluation per the UH-1N NATOPS manual. This flight may be flown in conjunction with CCX-400/401.

2. Formation Flight

a. Purpose. To become familiar with crew functions and responsibilities during formation flight.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (1 Flight, 1.5 Hours)

FORM-610 1.5 2 ACFT

Goal. Introduce formation flight procedures.

Requirement. Review hand and arm signals, lookout doctrine, and crew chief responsibilities associated with formation flight.

3. Night Vision Devices (NVD)(HLL)

a. Purpose. To provide the ability to safely utilize NVD's while conducting search operations during hours of darkness above .0022 lux. Aircrew Coordination shall be thoroughly briefed.

b. General. Review the MAWTS-1 NVD manual and the MAWTS-1 crew chief course ENLISTED AIRCREW NIGHT VISION TRAINING, prior to conducting NVD flights. The Instructor Crew Chief shall be a designated NSI. At the successful completion of this stage the CCUI will be NSSQ HLL.

c. Safety. Rappels, hoists, and shorthauls shall not be conducted while any crewmember is wearing NVD's.

d. Crew Requirements. ICC/CCUI

e. Flight Training (5 Flights, 7.5 Hours)

NVD-620 1.5 C 1 ACFT NS

Goal. Introduce NVD low work and the touch and go pattern

Requirement

(1) Introduce. Use and wear of NVD's

(2) Brief/Discuss. Use and limitations of NVD's, NVD battery failure, NVD tube failure, and aircraft emergencies while using NVD's.

Prerequisite. FAM-122

NVD-621 1.5 C,R 1 ACFT NS

Goal. Develop proficiency with NVD's

Requirement.

(1) Review. NVD-620

(2) Introduce.

(a) NVD navigation procedures.

(b) NVD CAL procedures.

(3) Brief/Discuss. Lookout and aircraft clearance.

Prerequisite. NVD-620

NVD-622 1.5 C 1 ACFT NS

Goal. Demonstrate proficiency with NVD's while conducting CAL operations and while assisting the pilot during navigation procedures.

Requirement

(1) Introduce. NVD MAL procedures.

(2) Review

(a) Lookout procedures required to assist the pilot when operation in a confined area. Stress safety procedures, aircraft clearance from obstacles, and terrain suitability while using NVD's.

(b) Use of check points, time distance checks, barrier features, prominent terrain features, and map preparation while using NVD's.

(4) Discuss. Slope, grade, and wind considerations while performing MAL's.

Prerequisite. NVD-621.

NVD-623 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's in an HLL environment.

Requirement

(1) Review

(a) Procedures to assist the pilot when operating in confined areas with NVD's.

(b) NVD MAL procedures and NVD emergency procedures.

(c) Navigation while using NVD's.

Prerequisite. NVD-622

NVD-624 1.5 C,R E 1 ACFT NS

Goal. Refine crew coordination during a night SAR mission in an HLL environment.

Requirement

(1) Demonstrate. Proficiency in the use of NVD's above .0022 lux.

(2) Review. Procedures for NVD navigation, map preparation, CAL's, MAL's, and NVD emergency procedures.

(3) Brief/Discuss. Crew coordination, comfort levels, situational awareness, and terrain suitability and obstacle clearance.

Prerequisite. NVD-623

4. Night Vision Devices (NVD)(LLL).

a. Purpose. To develop proficiency to conduct operations while using NVD's below .0022 lux.

b. General.

(1) CCUI shall be NSSQ HLL.

(2) Upon completion of this stage the CCUI will be NSSQ LLL.

C. Ground Training. Review the MAWTS-1 NVD Manual.

d. Crew requirement. NSI/CCUI.

e. Prerequisite. NVD-624.

f. Flight Training (3 Flight, 4.5 hours)

NVD-630 1.5 C 1 ACFT NS

Goal. Perform NVD low work and pattern work during low light level conditions.

Requirement

(1) Introduce. Basic low work and pattern work in LLL.

(2) Brief/Discuss. Use of NVD's during low light level conditions, to include battery failure and crew coordination.

NVD-631 1.5 C 1 ACFT NS

Goal. Develop proficiency in CAL's, MAL's, and navigation procedures while using NVD's during low light level conditions.

Requirement

(1) Introduce. CAL's and navigation flight while using NVD's during low light level conditions.

(2) Brief/Discuss. Comfort levels, map preparation, and crew coordination.

Prerequisite. NVD-630.

NVD-632 1.5 C,R E 1 ACFT NS

Goal. To demonstrate proficiency in the low light level environment.

Requirement

(1) Conduct. Simulated SAR mission under low light level conditions.

(2) Brief/Discuss. NVD navigation, map preparation, crew

coordination, and comfort level.

Prerequisite. NVD-631.

1460. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UH-1N (SAR) MOS: 6174 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION CAPABLE TRAINING								
FAM	100	1.5	*	2.5	X			1 ACFT
	101	1.5	*	2.5	X			1 ACFT
	102	1.5	*	2.5	X			1 ACFT
	103	1.5	*	2.5	X			1 ACFT N
	104	1.5	*	2.5	X			1 ACFT N
NAV	110	1.5	*	2.5	X	X		1 ACFT
	111	1.5	*	2.5	X	X		1 ACFT
	112	1.0	*	2.5	X	X		1 ACFT N
	113	1.0	*	2.5	X	X		1 ACFT N
CAL	120	1.5	*	2.5	X			1 ACFT
	121	1.5	*	2.5	X			1 ACFT
	122	1.5	*	2.5	X			1 ACFT N
INST	130	1.5	*	5.0	X			1 ACFT(N)(S)
MISSION READY TRAINING								
NAV	200	1.0	6	0.5	X	X		1 ACFT
	201	1.0	6	0.5	X	X		1 ACFT
	202	1.5	6	1.0	X	X		1 ACFT
	203	1.5	C	1.0	X	X		1 ACFT
	204	1.0	3	1.0	X	X		1 ACFT N
	205	1.0	3	1.0	X	X		1 ACFT N
CAL	210	1.5	6	1.0	X	X		1 ACFT
	211	1.5	3	1.0	X			1 ACFT
	212	1.5	3	1.0	X	X		1 ACFT
	213	1.5	6	1.0	X	X		1 ACFT N
	214	1.5	3	1.0	X	X		1 ACFT N
MISSION QUALIFICATION TRAINING								
SAR	300	1.0	C	0.5	X	X		1 ACFT
	301	1.0	C	0.5	X	X		1 ACFT
	302	1.0	C	0.5	X	X		1 ACFT
	303	1.0	C	0.5	X	X		1 ACFT
	304	1.0	6	0.5	X	X		1 ACFT
	305	1.0	6	0.5	X	X		1 ACFT
	306	1.0	C	1.0	X	X		1 ACFT N
	307	1.0	C	1.0	X	X		1 ACFT
	308	1.0	C	1.0	X	X		1 ACFT N
	309	1.0	C	1.0	X	X		1 ACFT
	310	1.0	C	1.0	X	X		1 ACFT N
	311	1.0	1	1.0	X	X		1 ACFT
	312	1.0	1	1.0	X	X		1 ACFT
	313	1.0	C	1.0	X	X		1 ACFT N
	314	1.0	1	1.0	X	X		1 ACFT N

Figure 14-1.--UH-1N (SAR) Crew Chief Refly Interval, Mission Readiness Percentages.

AIRCRAFT: UH-1N (SAR) MOS: 6174 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
SAR	315	1.0	1	1.0	X	X		1 ACFT N
	316	1.5	3	1.0	X	X		1 ACFT
	317	1.5	3	1.0	X	X		1 ACFT N
FULL MISSION QUALIFICATION TRAINING								
CCX	400	1.5	C	7.5	X	X	X	1 ACFT
	401	1.5	*	7.5	X	X	X	1 ACFT N
INSTRUCTOR TRAINING								
IUT	500	1.5						
	501	1.5						
SPECIAL FLIGHT TRAINING								
EVAL	600	1.5	C				X	1 ACFT(N)
FORM	610	1.5	C					2 ACFT
NVG	620	2.0	6		X			1 ACFT NS
	621	2.0	6		X			1 ACFT NS
	622	2.0	6		X			1 ACFT NS
	623	2.0	6		X			1 ACFT NS
	624	1.5	6		X	X	X	1 ACFT NS
	630	1.5	6		X			1 ACFT NS
	631	1.5	6		X			1 ACFT NS
	632	1.5	C		X	X	X	1 ACFT NS

14-1.--UH-1N (SAR) Crew Chief Refly Interval, Mission Readiness Percentages, Continued.

CREW CHIEF FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
NAV	200	
	201	
	202	
	203	
	204	200,202
	205	201
CAL	210	201
	211	201,210
	212	201,210,211
	213	201,205,210
	214	201,205,210,211,212
SAR	300	200,201,202
	301	300
	302	200,201,202,300,301
	303	300,301,302
	304	300,301,302,303
	305	300,301,302,303,304
	306	300,301,302,303
	307	200,201,202
	308	300,301,302,303,306
	309	300,301,302,303,304,305
	310	201,202,205,300,301,302,303,304,306,308
	311	201,202,300,301,307
	312	201,202,205,300,301,302,303,304,306,308,310
	313	201,202,300,301,307
	314	301,302,303,304,306,308,310,312
	315	307,311,313
	316	201,202,210
	317	205,316
CCX	400	200,201,202,210,300,301,302,316
	401	200,201,205,300,301,315

Figure 14-2.--UH-1N (SAR) Crew Chief Flight Update Chaining.

CHAPTER 15

UH-1N (SAR) RESCUE AIRCREWMAN
[IN-FLIGHT MEDICAL TECHNICIAN (IFMT)]

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 15

UH-1N (SAR) RESCUE AIRCREWMAN
[IN-FLIGHT MEDICAL TECHNICIAN (IFMT)]

1500. PROGRAMS OF INSTRUCTION FOR BASIC AND CONVERSION RESCUE AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Aircrew Candidate School	NATC
6	Rappelling School	HC-16
7-8	Ground School	SOMS
9-18	UH-1N Search and Rescue Training	SOMS

1501. POI FOR REFRESHER RESCUE AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1	Rappelling School	HC-16
2-3	Ground School	SOMS
4-9	UH-1N Search and Rescue Training	SOMS

1502. POI FOR INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1	Flight Training	SOMS

1503. POI FOR SPECIAL FLIGHTS

WEEKS	COURSE/PHASE	ACTIVITY
N/A	Annual Evaluation Flight	SOMS
1	Formation Flight	SOMS
1	Night Vision Device Operations	SOMS

1510. GROUND TRAINING COURSES OF INSTRUCTION

1. COURSE/PHASE	ACTIVITY
Naval Aircrew Candidate School	NATC
Naval Rappelling School	HC-16
Emergency Medical Technician 1A (EMT-1A) *	NRMC
I.V. Certification *	NRMC
CPR Certification *	NRMC
Advanced Cardiac Life Support (ACLS) *	NRMC
NITELAB	MAWTS-1

2. CURRENCY REQUIREMENTS. Courses identified with an asterisk (*) have currency limits and must be renewed per current directives. ACLS training is recommended only if available.

1511. SQUADRON LEVEL TRAINING

Aircraft Systems

Aircrew Safety and Emergency Procedures
Preflight Rigging and Maintenance of Medical/Rescue Gear
Paramedic/Local EMS and SAR Responsibilities
Rescue Reports
Aircrew Coordination and Responsibilities
Cockpit Orientation Including Instrument and Radio Operation
Use of Navigational Publications and Charts
NATOPS Flight Manual and Checklist Usage
Open and Closed Book NATOPS Examinations
Night Operations Course

1520. FLIGHT TRAINING: BASIC AND CONVERSION RESCUE AIRCREWMAN

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification (Aircrew and Rappelling Schools)	-	-	45.0
Familiarization	5	5.0	15.0
Total	**5**	**5.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Navigation	3	4.0	3.0
Confined Area Landing	5	7.5	5.0
Search and Rescue	2	3.0	2.0
Total	**10**	**14.5**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search and Rescue	**15**	**22.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
SAR Rescue Aircrewman Check	**2**	**3.0**	**15.0**
Total for Basic and Conversion Rescue Aircrewman	**32**	**45.0**	**100.0**

1521. REFRESHER RESCUE AIRCREWMAN

1. Mission Capable Training

STAGE	FLIGHTS	HOURS
Familiarization	**2**	**2.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS
Navigation	2	3.0
Confined Area Landing	4	6.0
Search and Rescue	2	3.0
Total	**8**	**12.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR Operations	**10**	**15.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR Check	**2**	**3.0**
Total for Refresher Aircrewman	**22**	**32.0**

1522. INSTRUCTOR UNDER TRAINING (IUT)

STAGE	FLIGHTS	HOURS
Familiarization/Navigation	1	1.5
Confined Area Landing/SAR	1	1.5
Total	**2**	**3.0**

1523. SPECIAL FLIGHT TRAINING

STAGE	FLIGHTS	HOURS
Annual Evaluation Flight	1	1.5
Formation Flight	1	1.5
Night Vision Devices	8	12.0
Total	**10**	**15.0**

1530. SIMULATOR TRAINING. Not applicable.

1540. FLIGHT PERFORMANCE REQUIREMENTS

1. General

a. Not Currently UH-1N (SAR) Qualified. When assigned to a UH-1N (SAR) billet, a crewman who is not currently UH-1N (SAR) qualified shall complete the Basic/Conversion POI. Corpsmen are normally assigned as UH-1N (SAR) rescue aircrewmen.

b. Prior UH-1N (SAR) Qualification. When assigned to a UH-1N (SAR) billet, a crewman who was previously UH-1N (SAR) qualified shall complete the Refresher POI.

c. Terms. When used in this chapter RAI refers to the Rescue Aircrewman Instructor, RAUI refers to the Rescue Aircrewman Under Instruction, and RA refers to a qualified Rescue Aircrewman. If the RA is a Navy corpsman, he is also considered an In-Flight Medical Technician (IFMT).

d. Progression. RAUI should complete all stages within each phase before progressing to the next phase.

e. Crew members **shall** fly events annotated with an "NS" with Night Vision Goggles, for the entire flight. Minimum crew includes a qualified Aerial Observer for all events annotated with an "NS". Crew members **may** fly events annotated with "(NS)" with the option of using NVG's.

2. Designation. Upon successful completion of the appropriate POI, and a minimum of 50 UH-1N (SAR) flight hours a crewman under instruction will become eligible for rescue aircrewman designation. Designation will be per OPNAVINST 3710.7 and the UH-1N NATOPS Flight Manual.

3. Crew Requirement/Position Indicators. An RAI is required for each flight in the POI. The RAUI will occupy the RA position except when the RAI is demonstrating a maneuver. A SAR crew chief is required for all CAL, SAR and EVAL flights.

4. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

1541. MISSION CAPABLE TRAINING

1. General

a. Prior to flight training the RAUI shall complete a NATOPS open book examination.

b. A locally prepared reading list which shall include appropriate sections from the NATOPS manual, NWP-19, NWP 19-1, NWP 55-8-SAR, the unit SOP, and other locally pertinent publications shall be completed prior to RAX-400.

2. Familiarization

a. Purpose. To become familiar with basic flight characteristics, limitations and emergency procedures. To develop proficiency in assisting pilots and crew chiefs in all aspects of flight.

b. General. Prior to flight training, orient the RAUI to the UH-1N cabin and cockpit (including instruments and radios).

c. Flight Training (5 flights, 5.0 Hours)

FAM-100 1.0 C 1 ACFT

Goal. Introduce normal operating procedures for the UH-1N.

Requirement

(1) Introduce. Preflight, postflight, start procedures, engine fire emergencies, in-flight emergency procedures, and lookout procedures. Conduct an egress drill.

(2) Brief/Discuss. Passenger briefing and aircraft configuration, inflight emergency procedures, the local SAR area of responsibility, aircraft security, and local course rules.

FAM-101 1.0 C 1 ACFT

Goal. To increase familiarity with the UH-1N.

Requirement

(1) Introduce. Rescue aircrewman duties to include zone briefs, lookout procedures, radio communication procedures, and takeoff/landing procedures.

(2) Review. Start up procedures, emergency procedures, aircraft limitations, passenger briefing, and flight characteristics.

(3) Brief/Discuss. In-flight emergency procedures.

FAM-102 1.0 C 1 ACFT

Goal. To increase familiarity with the UH-1N.

Requirement

(1) Review

(a) Simulated in-flight emergencies and normal in-flight rescue aircrewman responsibilities.

(b) Proper lookout procedures and proper takeoff and landing procedures.

(2) Fly in the copilot's seat when practical.

(3) Brief/Discuss. Specific rescue aircrewman functions, emergency procedures, radio, and observation procedures. Emphasize NATOPS Qualified Observer duties.

FAM-103 1.0 C,R 1 ACFT

Goal. Become familiar with UH-1N emergency procedures.

Requirement

(1) Introduce. Autorotations, cut guns, single and dual engine failures, and hydraulic malfunctions.

(2) Review. All previous FAM work.

FAM-104 1.0 C,R 1 ACFT N

Goal. Become familiar with UH-1N night operations.

Requirement. Review FAM-102 and FAM-103 at night.

1542. MISSION READY TRAINING

1. General. The RAUI shall complete the Naval Rappelling Course before conducting any rappelling operations during this stage of training.

2. Navigation

a. Purpose. To introduce basic navigation principles during day and night operations.

b. Flight Training (3 Flights, 4.0 Hours)

NAV-200 1.0 C 1 ACFT

Goal. Introduce local navigation skills.

Requirement

(1) Introduce. Local hospitals, major highways/roads, landmarks, and the local SAR operating area.

(2) Brief/Discuss. Maps, charts, and publications applicable to navigation in the local area.

NAV-201 1.5 C,R 1 ACFT

Goal. Practice local navigation skills.

Requirement

(1) Introduce. Local CAL sites.

(2) Review. Navigating to local hospitals, major highways/ roads, landmarks, and throughout the local SAR operating area. Emphasize the use of local geographical and manmade navigation aids.

NAV-202 1.5 C,R 1 ACFT N

Goal. Introduce navigation in the local area at night.

Requirement. Review NAV-201 at night.

3. Confined Area Landings (CAL)

a. Purpose. Introduce procedures required to operate from a confined landing area during day and night operations.

b. Flight Training (5 Flights, 7.5 Hours)

CAL-210 1.5 C 1 ACFT

Goal. Introduce CAL operations.

Requirement

(1) Introduce. CAL operations. Emphasize landing zone briefs, waveoff instructions, obstacles (in/approaching the zone), determination of wind direction, and touchdown clearance (approach/departure).

(2) Brief/Discuss. Emergency procedures, aircraft limitations, and dynamic rollover characteristics.

CAL 211 1.5 C,R 1 ACFT

Goal. Increase proficiency in CAL operations.

Requirement

(1) Introduce. Slope and one skid landings.

(2) Review. CAL-210.

CAL-212 1.5 C,R 1 ACFT N

Goal. Introduce night CAL operations.

Requirement. Review CAL-211 at night emphasizing depth perception and masking of terrain and obstacles.

Prerequisite: NAV-202.

CAL-213 1.5 C,R 1 ACFT

Goal. Practice advanced CAL operations.

Requirement

(1) Review. CAL-211. Emphasize mountainous techniques including the use of unprepared landing sites where available.

(2) Brief/Discuss. Mountainous techniques, procedures, and effects of high density altitude.

CAL-214 1.5 C,R 1 ACFT N

Goal. Practice advanced CAL operations at night.

Requirement. Review CAL-213 at night.

4. Search and Rescue

a. Purpose. To introduce basic rappel master techniques.

b. Flight Training (2 Flights, 3.0 Hours)

SAR-220 1.5 C,R 1 ACFT

Goal. To become familiar with conducting aircraft rappelling operations.

Requirement

(1) Demonstrate. ICC demo rappel master responsibilities and special safety precautions (demo at least 4 rappels).

(2) Brief/Discuss. Aircraft rigging procedures, equipment safety inspection requirements, lost communication procedures, and rappelling emergency procedures.

SAR-221 1.5 C,R 1 ACFT

Goal. To become proficient at rappel master techniques and safety responsibilities.

Requirement. Refine rappel master techniques by performing 4 CAL site rappels.

1543. MISSION QUALIFICATION TRAINING

1. General

a. The RAUI shall be currently certified for EMT, IV and CPR before designation as an RAC.

b. The RAUI shall complete the Naval Rappelling Course before conducting any rappelling operations during this stage of training.

c. Before conducting rappel operations from aircraft, RAUI will perform a minimum of 5 tower rappels.

d. Due to local SAR demands the need for specific rescue techniques varies between SAR commands. The two recognized rescue procedures are short haul and stokes evolution. As used herein stokes evolution refers to the rappel of the corpsman/rescue aircrewman, egress of the stokes litter, and finally a hoist of either both stokes litter and corpsman, or both separately. Short haul herein refers to shorthauling either RA, combined RA/Patient, or RA/Stokes litter.

2. Search and Rescue

a. Purpose. Develop proficiency in search and rescue techniques.

b. Flight Training (15 Flights, 22.5 Hours)

SAR-300 1.5 C,R 1 ACFT

Goal. Introduce rappel and hoist operations.

Requirement

(1) Introduce. Rigging the aircraft for rappelling and hoisting. Execute a minimum of 5 rappels and 5 hoists at various altitudes. Rappels: 2 at 75', 1 at 100', 1 at 150', and 1 at 200'. Hoists as desired.

(2) Brief/Discuss. Hand signals and rappelling/hoisting emergencies.

SAR-301 1.5 C 1 ACFT N

Goal. Introduce rappel and hoist operations at night.

Requirement. Review SAR-300 at night.

SAR-302 1.5 C 1 ACFT

Goal. Introduce rappel and hoist operations in conjunction with a weighted stokes litter.

Requirement

(1) Conduct. Minimum of 2 stokes evolutions in an area free of obstacles.

(2) Review. NAV-201.

(3) Brief/Discuss. Proper rigging, applicable rappel & hoist emergencies, and hand signals.

SAR-303 1.5 C,R 1 ACFT

Goal. Practice rappel and hoist operations in conjunction with a weighted stokes litter.

Requirement

(1) Conduct. Minimum of 2 stokes evolutions in moderately rough terrain.

(2) Review. CAL-213.

SAR-304 1.5 C 1 ACFT N

Goal. Introduce rappel and hoist operations in conjunction with a weighted stokes litter at night.

Requirement. Review SAR-302 at night and NAV-202.

SAR-305 1.5 C,R 1 ACFT N

Goal. Practice rappel and hoist operations in conjunction with a weighted stokes litter at night.

Requirement. Review SAR-303 at night and CAL-214.

SAR-306 1.5 C,R 1 ACFT

Goal. Introduce short haul operations.

Requirement

(1) Conduct. Minimum of four, 50-100 meter short haul evolutions in an area free of obstacles.

(2) Brief/Discuss. Proper rigging, applicable hand signals, and emergency procedures for short hauls.

SAR-307 1.5 C,R 1 ACFT N

Goal. Introduce short haul operations at night.

Requirement. Review SAR-306 at night.

SAR-308 1.5 C,R 1 ACFT

Goal. Introduce rugged terrain short haul operations.

Requirement

(1) Conduct. Minimum of three, 100 meter short haul evolutions in rugged terrain. Conduct at least one evolution using cliff or vertical face technique.

(2) Brief/Discuss. Proper rigging, applicable hand signals, and emergency procedures for short hauls for cliffs or vertical face.

SAR-309 1.5 C,R 1 ACFT N

Goal. Introduce rugged terrain short haul operations at night.

Requirement. Review SAR-308 at night.

SAR-310 1.5 C,R 1 ACFT

Goal. Practice rappel and hoist operations.

Requirement

(1) Conduct. Minimum of two stokes evolutions in rough terrain.

(2) Brief/Discuss. Search patterns and scanning techniques.

SAR-311 1.5 C 1 ACFT N

Goal. Practice rappel and hoist operations at night.

Requirement. Review SAR-310 at night.

SAR-312 1.5 C 1 ACFT N

Goal. Refine rappel and hoist operations.

Requirement

(1) Conduct. Minimum of two stokes evolutions in rugged terrain during the hours of darkness.

(2) Brief/Discuss. Search patterns and scanning techniques at night.

SAR-313 1.5 C,R 1 ACFT

Goal. Review all SAR procedures during a simulated search and rescue scenario.

Requirement. Using a simple mission scenario, execute all facets of a simulated rescue mission. Scenario should include communication, navigation to the rescue area, and return to a major hospital.

SAR-314 1.5 C,R 1 ACFT N

Goal. Review all SAR procedures during a simulated search and rescue at night.

Requirement. Review SAR-313 at night.

1544. FULL MISSION QUALIFICATION TRAINING

1. Rescue Aircrewman Checkride (RAX).

a. Purpose. To evaluate proficiency in all operations required of a UH-1N (SAR) Rescue Aircrewman.

b. General. The RAUI shall complete the NATOPS closed book examination prior to RAX-400/401.

c. Flight Training (2 Flights, 3.0 Hours)

RAX-400 1.5 C,R E 1 ACFT

Goal. Evaluation flight.

Requirement. During a search and rescue scenario(s) the RAUI must demonstrate a thorough knowledge of aircraft systems, capabilities, limitations, and emergency procedures. He must demonstrate a working knowledge of the National SAR System and a thorough knowledge of the local SAR SOP. He must demonstrate proper rigging, equipment inspection, hoisting and rappelling, short haul, and rescue procedures. The ability to perform emergency medicine under varying emergency, meteorological, and terrain conditions must be clearly shown.

RAX-401 1.5 C,R E 1 ACFT N

Goal. Night evaluation flight.

Requirement. Review RAX-400 at night.

1550. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Qualification. An IUT will be considered qualified to instruct all flights in a particular stage of training upon completion of the corresponding IUT flights.

b. Standardization. Techniques of instruction and standardization shall be stressed on all IUT flights.

c. Roles. The RAI will play the role of RAUI and the IUT will instruct to the greatest extent possible on all IUT flights.

d. Flight Training (2 Flights, 3.0 Hours)

IUT-500 1.5 1 ACFT

Goal. Qualify the IUT to instruct FAM, NAV, and CAL stage flights.

Requirement

(1) Review. All FAM, NAV, and CAL requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. In-flight emergency procedures.

IUT-501 1.5 1 ACFT

Goal. Qualify the IUT to instruct SAR stage flights.

Requirement

(1) Review. All SAR requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for SAR flights with regard to all safety precautions.

1551. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Annual Evaluation Flights

a. Purpose. To conduct an annual NATOPS evaluation.

b. Flight Training (1 Flight, 1.5 Hours)

EVAL-600 1.5 E 1 ACFT (N)

Goal. Conduct an annual NATOPS evaluation.

Requirement. Complete the NATOPS evaluation per the UH-1N NATOPS manual. This flight may be flown in conjunction with RAX-400/401.

2. Formation Flight

a. Purpose. To become familiar with crew functions and responsibilities required during formation flight.

b. Flight Training (1 Flight, 1.5 Hours)

FORM-610 1.5 2 ACFT

Goal. Introduce formation flight procedures.

Requirement. Introduce hand and arm signals, lookout procedures, and rescue aircrewman responsibilities associated with formation flight.

3. Night Vision Devices (NVD)(HLL)

a. Purpose. To provide the ability to safely utilize NVD's while conducting search operations during hours of darkness above .0022 lux. Aircrew Coordination shall be thoroughly briefed.

b. General. Review the MAWTS-1 NVD manual and the MAWTS-1 crew chief course ENLISTED AIRCREW NIGHT VISION TRAINING, prior to conducting NVD flights. The Instructor Crew Chief shall be a designated NSI. At the successful completion of this stage the AOUI will be NSSQ HLL.

c. Safety

(1) Rappels, hoists, and shorthauls shall not be conducted while any crew member is wearing NVD's.

(2) Refer to MCO P3500.14, Chapter 9 for NVD policies.

d. Crew Requirements. ICC/AOUI

e. Flight Training (5 Flights, 7.5 Hours)

NVD-620 1.5 C 1 ACFT NS

Goal. Introduce NVD low work and the touch and go pattern

Requirement

(1) Introduce. Use and wear of NVD's

(2) Brief/Discuss. Use and limitations of NVD's, NVD battery failure, NVD tube failure, and aircraft emergencies while using NVD's.

Prerequisite. FAM-122

NVD-621 1.5 C,R 1 ACFT NS

Goal. Develop proficiency with NVD's

Requirement

(1) Introduce

(a) NVD navigation procedures.

(b) NVD CAL procedures.

(2) Brief/Discuss. Lookout and aircraft clearance.

(3) Review. NVD-620

Prerequisite. NVD-620

NVD-622 1.5 C 1 ACFT NS

Goal. Demonstrate proficiency with NVD's while conducting CAL operations and while assisting the pilot during navigation procedures.

Requirement

(1) Introduce. NVD MAL procedures.

(2) Review

(a) Lookout procedures required to assist the pilot when operation in a confined area. Stress safety procedures, aircraft clearance from obstacles, and terrain suitability while using NVD's.

(b) Use of check points, time distance checks, barrier features, prominent terrain features, and map preparation while using NVD's.

(3) Discuss. Slope, grade, and wind considerations while performing MAL's.

Prerequisite. NVD-621

NVD-623 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's in a HLL environment.

Requirement

(1) Review

(a) Procedures to assist the pilot when operating in confined areas with NVD's.

(b) Navigation while using NVD's.

(c) NVD MAL procedures and NVD emergency procedures.

Prerequisite. NVD-622

NVD-624 1.5 C,R E 1 ACFT NS

Goal. Refine crew coordination during a night SAR mission in an HLL environment.

Requirement

(1) Demonstrate. Proficiency in the use of NVD's above .0022 lux.

(2) Review. Procedures for NVD navigation, map preparation, CAL's, MAL's, and NVD emergency procedures.

(3) Brief/Discuss. Crew coordination, comfort levels, situational awareness, and terrain suitability and obstacle clearance.

Prerequisite. NVD-623

4. Night Vision Devices (NVD)(LLL).

a. Purpose. To develop proficiency to conduct operations while using NVD's below .0022 lux.

b. General

(1) AOUI shall be NSSQ HLL.

(2) Upon completion of this stage the AOUI will be NSSQ LLL.

C. Ground Training. Review the MAWTS-1 NVD Manual.

d. Crew requirement. ICC/AOUI.

e. Prerequisite. NVD-624

f. Flight Training (3 Flights, 4.5 hours).

NVD-630 1.5 C 1 ACFT NS

Goal. Perform NVD low work and pattern work during low light level conditions.

Requirement

(1) Introduce. Basic low work and pattern work in the LLL.

(2) Brief/Discuss. Use of NVD's during low light level conditions, to include battery failure and crew coordination.

NVD-631 1.5 C 1 ACFT NS

Goal. Develop proficiency in CAL's, MAL's, and navigation procedures while using NVD's during low light level conditions.

Requirement

(1) Conduct. CAL's and navigation flight while using NVD's during low light level conditions.

(2) Brief/Discuss. Comfort levels, map preparation, and crew coordination.

Prerequisite. NVD-630

NVD-632 1.5 C,R E 1 ACFT NS

Goal. To demonstrate proficiency in the low light level environment.

Requirement. Conduct a simulated SAR mission under low light level conditions.

1560. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UH-1N (SAR) MOS: XXXX CREW POSITION: RESCUE AIRCREWMAN/IFMT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION CAPABLE TRAINING								
FAM	100	1.0	*	3.0	X			1 ACFT
	101	1.0	*	3.0	X			1 ACFT
	102	1.0	*	3.0	X			1 ACFT
	103	1.0	*	3.0	X	X		1 ACFT
	104	1.0	*	3.0	X	X		1 ACFT N
MISSION READY TRAINING								
NAV	200	1.0	C	1.0	X			1 ACFT
	201	1.5	6	1.0	X	X		1 ACFT
	202	1.5	6	1.0	X	X		1 ACFT N
CAL	210	1.5	C	1.0	X			1 ACFT
	211	1.5	6	1.0	X	X		1 ACFT
	212	1.5	6	1.0	X	X		1 ACFT N
	213	1.5	6	1.0	X	X		1 ACFT
	214	1.5	6	1.0	X	X		1 ACFT N
SAR	220	1.5	6	1.0	X	X		1 ACFT
	221	1.5	6	1.0	X	X		1 ACFT
MISSION QUALIFICATION TRAINING								
SAR	300	1.5	C	1.0	X	X		1 ACFT
	301	1.5	1	1.0	X			1 ACFT N
	302	1.5	C	1.0	X			1 ACFT
	303	1.5	6	1.0	X	X		1 ACFT
	304	1.5	6	1.0	X			1 ACFT N
	305	1.5	6	1.0	X	X		1 ACFT N
	306	1.5	3	1.0	X	X		1 ACFT
	307	1.5	3	1.0	X	X		1 ACFT N
	308	1.5	1	1.0	X	X		1 ACFT
	309	1.5	6	1.0	X	X		1 ACFT N
	310	1.5	C	1.0	X	X		1 ACFT
	311	1.5	1	1.0	X			1 ACFT N
	312	1.5	1	1.0	X			1 ACFT N
	313	1.5	3	1.0	X	X		1 ACFT
	314	1.5	3	1.0	X	X		1 ACFT N
FULL-MISSION QUALIFICATION TRAINING								
RAX	400	1.5	C	7.5	X	X	X	1 ACFT
	401	1.5	C	7.5	X	X	X	1 ACFT N
INSTRUCTOR TRAINING								
IUT	500	1.5						1 ACFT
	501	1.5						1 ACFT

Figure 15-1.--UH-1N (SAR) Rescue Aircrewman Refly Interval, Mission Readiness Percentages.

AIRCRAFT: UH-1N (SAR) MOS: XXXX CREW POSITION: RESCUE_____
AIRCREWMAN/IFMT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
SPECIAL FLIGHT TRAINING								
EVAL	600	1.5	C				X	1 ACFT (N)
FORM	610	1.5	C					2 ACFT
NVD	620	1.5	6		X			1 ACFT NS
	621	1.5	6		X			1 ACFT NS
	622	1.5	6		X			1 ACFT NS
	623	1.5	6		X			1 ACFT NS
	624	1.5	6		X	X	X	1 ACFT NS
	630	1.5	6		X			1 ACFT NS
	631	1.5	6		X			1 ACFT NS
	632	1.5	C		X	X	X	1 ACFT NS

Figure 15-1.--UH-1N (SAR) Rescue Aircrewman Refly Interval, Mission Readiness Percentages, Continued.

RESCUE AIRCREWMAN FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
NAV	200	
	201	200
	202	200,201
CAL	210	
	211	210
	212	210,211
	213	210,211
	214	210,211,212,213
SAR	220	
	221	220
SAR	300	
	301	300
	302	200,201,300
	303	210,212,213,300,302
	304	200,201,202,300,301,302
	305	210,211,214,300,301,302
	306	300
	307	300,301,306
	308	300,306
	309	300,301,306,308
	310	300.302,303
	311	300,301,302,303,304,305,310
	312	300,301,302,303,304,305,310,311
	313	200,201,210,300,302,303,306,308,310
	314	200,201,202,210,211,214,300,301,302,303,304,305,306,307, 308,309,310,311,312,313,
RAX	400	200,201,210,211,213,220,221,300,302,303,306,308,310,313
	401	201,202,211,214,220,221,301,304,305,307,309,311,312,314

Figure 15-2.--UH-1N (SAR) Rescue Aircrewman Flight Update Chaining.

CHAPTER 16

F-5 PILOT

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

1600. PROGRAMS OF INSTRUCTION

1601. CONVERSION PILOT. All pilots shall have a tactical jet background. Air Combat Tactics Instructor designation is required.

Weeks	Course	Activity
1-2	Ground School, Mission Capable Training	VMFT-401/VFC-13
3-5	Mission Ready Training	VMFT-401
6-12	Mission Qualification Training	VMFT-401
12-16	Full-Mission Qualification Training	VMFT-401

1602. REFRESHER PILOT. Greater than 12 months since last F-5 flight.

WEEKS	COURSE	ACTIVITY
1-2	Ground School, Mission Capable Refresher Training	VMFT-401
3-4	Mission Ready Training	VMFT-401

1603. INSTRUCTOR UNDER TRAINING (IUT)

WEEKS	COURSE	ACTIVITY
1	Instructor Under Training	VMFT-401

1610. GROUND TRAINING.

1611. COURSES OF INSTRUCTION

COURSE	ACTIVITY
F-5 Aircraft System	USAF/VMFT-401
Adversary Pilot Syllabus	MAWTS-1/VMFT-401
Threat Weapons	MAWTS-1/VMFT-401
Threat Tactics	MAWTS-1/VMFT-401
Fighter Performance	MAWTS-1/VMFT-401
Helicopter Performance/Tactics	MAWTS-1/VMFT-401
Low Altitude Tactics Syllabus	MAWTS-1/VMFT-401

1612. SIMULATOR TRAINING. No F-5 flight simulator is avaiable at MCAS Yuma. Cockpit procedures trainer, if available, will be utilized prior to the first flight of mission capable training.

1613. SQUARDON LEVEL TRAINING. Training will include, but not be limited to, an adversary and LAT training syllabus conducted by VMFT-401 and MAWTS-1.

1620. FLIGHT TRAINING. The Conversion, Refresher, and Instructor courses of instruction are contained herein. Due to the nature of the adversary support mission, all F-5 pilots will have a 7523 MOS and ACTI designation. VMFT-401 does not possess the facilities nor equipment to conduct Basic or Transiton training. Figure 16-1 provides refly interval and mission readiness percentage.

1. Conversion Pilot

a. Mission Capable Training

Stage	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	25.5
Familiarization	7	5.6	24.5
Instruments	1	1.0	3.5
Air Intercept	2	2.4	7.0
	10	9.0	60.0

b. Mission Ready Training

Stage	FLIGHTS	HOURS	PERCENT
Instruments	1	1.0	0.5
Air-To-Air	11	8.8	6.0
Air Intercept	2	2.0	1.0
Navigation	1	0.8	0.5
Low Altitude Tactics	4	3.2	2.0
	19	15.8	10.0

c. Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	7	5.6	8.0
Surface Attack	1	0.8	1.0
Helicopter Attack	3	2.4	4.0
Strike Intercept	2	1.6	2.0
	13	10.4	15.0

d. Full-Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	6	4.8	10.0
Helicopter Attack	1	0.8	1.0
Anti-Air Warfare	2	1.6	3.0
	9	7.2	15.0
Total	51	42.4	100.0

2. Refresher Pilot

a. Mission Capable Training

Stage	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	46.0
Fimiliarization	3	2.4	10.5
Instruments	1	1.0	3.5
	4	3.5	60.0

b. Mission Ready Training

Stage	FLIGHTS	HOURS	PERCENT
Instruments	1	1.0	0.5
Air-To-Air	11	8.8	6.0
Air Intercept	2	2.0	1.0
Navigation	1	0.8	0.5
Low Altitude Tactics	4	3.2	2.0
	19	15.8	10.0

c. Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	7	5.6	8.0
Surface Attack	1	0.8	1.0
Helicopter Attack	3	2.4	4.0
Strike Intercept	2	1.6	2.0
	13	10.4	15.0

d. Full-Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	6	4.8	10.0
Helicopter Attack	1	0.8	2.0
Anti-Air Warfare	2	1.6	3.0
	9	7.2	15.0
Total	45	36.8	100.0

1641. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. To develop proficiency and familiarity with aircraft flight characteristics, limitations, emergency procedures, and maneuvering envelope including all authorized aerobatics.

b. General.

(1) All flights in familiariztion stage with the exception of INST 110, shall be flown during daylight hours.

(2) All FAM flights shall be led by designated F-5 FAM instructor or may be flown in a F-5F.

(3) Prior to commencing syllabus training, pilots shall:

(a) Complete F-5 ground school.

(b) Successfully complete the open closed book F-5 NATOPS examinations.

(c) Review the F-5 departure/spin video tape.

(d) Receive the F-5 Northrop seat brief to include aeromedical aspects.

(e) Be qualified and current for flight in naval aircraft.

(f) If no F-5F is available FAM 104 will be the last flight flown in the mission capable stage.

c. Flight Training (7 Flights, 5.6 Hours)

FAM-99 NO FLIGHT 1 F-5F/1 F-5E

Goal. To introduce F-5 ground operations and preflight

Requirement. Demonstrate aircraft preflight inspection, cockpit and parachute preflight inspection, start and line procedures.

FAM-100 0.8 1 F-5F

Goal. To introduce F-5 flight characteristics, maneuvers and landing pattern.

Requirement. Perform A/B takeoff, aerobatics to include: Aileron roll, wing over, barrel roll, loop(450 to 500), Immelann, split S. Introduce inverted pitch hang-up recovery, pushover, clean and dirty stall recovery, accelerated stall recovery, airborne shutdown and air start, emergency landing gear release, field entry, and full flap landings.

FAM-101 0.8 1 F-5F

Goal. To introduce F-5 flight characteristics, maneuvers and landing pattern.

Requirement. Perform Tiger start, A/B takeoff, review aerobatics, introduce hard and break turns(with/without flaps), acceleration exercise (loaded/unloaded), rudder rolls, PAR approach, simulated single engine approach, no flap landings, full flap landings, drag chute full stop landings.

FAM-102 0.8 2 F-5/1 F-5F

Goal. Introuduce F-5 flight characteristics, maneuvers and landing pattern.

Requirement. Perform A/B takeoff, MRT climb, high and slow speed maneuvering, loops and barrel rolls. Hard and break turns, GCA to multiple touch and go landings, and full stop with no less than 1,000 lbs. Lead brief crosswind landing technique. If several FAM-102 sorties are flown concurrently, a single chase is acceptable provided ground and flight procedures are briefed with all participants as well as emergency procedures and area deconfliction.

FAM-103 0.8 2 F-5/1 F-5F

Goal. Further familiarization of pilot with F-5 flight characteristics, maneuvers and landing pattern.

Requirement. A/B takeoff. Practice aerobatics to include 400/450 KIAS loops starting at 10K. Split S starting at 20K and 270 to 300 KCAS. Level, acceleration from 250 to 400 KCAS with flaps in maneuver, flaps up, and unloaded flaps up. Note time for each. Section GCA/ILS to multiple touch and go landings. Full stop with no less than 1,000 lbs. If several FAM-103 events are flown concurrently a single chase is acceptable provided ground and flight procedures are briefed with all participants as well as emergency procedures and area deconfliction.

FAM-104 0.8 R 2 F-5/1 F-5F

Goal. F-5 flight envelope exploration.

Requirement. Review A/B take off, turn performance exercise. Introduce zero airspeed maneuver, vertical egg, flat scissors, rolling scissors, and guns defense. Review flied entry/break, and full flap landings. If an F-5F is not available for this flight, a dedicated attached chase is requiered for each FAM-104 flight.

FAM-105 0.8 R 2 F-5

Goal. Further familiarization of pilot with flight characteristics, maneuvers and landing pattern.

Requirement. A/B take off, flight lead separation with 10 second interval, practice formation flight to include two carrier rendezvous. Introduce tail chase with increasing diffuculty. Lead demo guns defense. Return to overhead for multiple touch and go's. Full stop with no less than 1,000 lbs.

FAM-106 0.8 R 2 F-5

Goal. Further familiarization of the pilot under instruction(PUI) with increasingly difficult maneuvers.

Requirement. A/B take off, flight lead separation. Practice formation flight to include combat spread and Soviet formations. Perform tail chase and advantage/ disadvantage maneuver. RTB to break and multiple touch and go's, and landing with no less than 1,000 lbs.

2. Instruments

a. Purpose. Develop the ability to execute precision maneuvers under instrument conditions, comply with IFR procedures, and utilizing all installed NAVAIDS.

b. General. Inst-110 may be flown as the first night event of this syllabus.

c. Flight training (1 Flight, 1.0 Hours)

INST-110 1.0 R 1 F-5E/1 F-5F

Goal. Practice instrument procedures and airways navigation.

Requirement. Fly a round robin instrument stereo route, instrument recovery, multiple GCA'a/ILS.

3. Air Intercept

a. Purpose. Introduce and develop proficiency in airborne intercept procedures in the F-5.

b. General.

(1) Prior to first flight, PUI will receive a class covering radar operation and techniques, intercept geometry and weapons systems employment.

(2) Air Intercept sorties should be flown on the TACTS range to the maximum extent possible.

(3) Captive missiles should be carried on each flight.

(4) Minimum Altitude: 1000 ft AGL day; 5,000 ft AGL night.

c. Flight Training (2 Flights, 2.4 Hours)

AI-120 1.2 2 F-5E

Goal. Introduce PUI to airborne radar operation and presentations in the beam and rear quarter environments.

Requirements. Introduce three rear quarter intercepts from 5NM trail, PUI will close to 1/2 NM co-speed. One run should be in search only. Conduct three successful intercepts from a beam position achieved. Target will be positioned at 2,000 ft above the fighter and 300 knots.

AI-121 1.2 2 F-5E

Goal. Intercept radar displays, intercept geometry in the forward quarter achieving both radar and rear quarter IR firing parameters.

Requirement. Conduct multiple medium altitude (15,000 to 20,000 ft) forward quarter (0 to 30 degree TA) culminating with radar launch, and rear quarter IR attacks. Bogey + 2,000 ft above the fighter, fighter + 25 KIAS advantage.

1642. MISSION READY TRAINING

1. Instruments

a. Purpose. Maintain currency and proficiency in flying in IMC flying and airways navigation.

b. General. Use of this flight as a refresher event, or a NATOPS/INST check or area FAM is encouraged.

c. Flight training (1 flight, 1.0 hours)

INST-200 1.0 R 1 or more F-5(day or night)

Goal. Maintain instrument proficiency.

Requirement. Perform airways navigation in accordance with existing instrument flight rules. Perform a minimum of one TACAN approach and one GCA/ILS.

2. Air-to-Air

a. Purpose. Introduce and develop proficiency in offensive and defensive maneuvering of the F-5 against similar and dissimilar bogies.

b. General.

(1) All flights must be lead by a designated AT(I) if any member of the flight is not ACM qualified or not a designated adversary tactics pilot.

(2) AA-215 must be successfully completed before continuing in this stage.

(3) Starting with AA-213, one engagement of each flight will emphasize use of forward quarter infra-red tactics and counter tactics.

c. Flight Training (11 Flights, 8.8 Hours)

AA-210 0.8 R 2 F-5

Goal. Practice defensive first move options.

Requirement. Practice gun sight tracking enroute to the area. Defensive starts with instructor or offensive perch to role reversal.

AA-211 0.8 R 2 F-5

Goal. Practice offensive maneuvering.

Requirement. Practice Soviet formations en route to the area. Perform the 180* guns drill. Practice offensive maneuvering from a perch setup.

AA-212 0.8 R 2 F-5

Goal. Review offensive and defensive maneuvering.

Requirement. Perform tail chase en route to the area. Perform two offensive setups and two defensive setups.

AA-213 0.8 R 2 F-5

Goal. Introduce neutral setups.

Requirement. Pilot under instruction shall brief and lead. Practice first move options from neutral starts to include energy fight, position fight and mirror fight.

AA-214 0.8 R 2 F-5

Goal. Review neutral maneuvering.

Requirement. Pilot under instruction shall brief and lead. Practice first move options from neutral setups.

AA-215 0.8 R,E 2 F-5

Goal. Evaluate progress in AA stage.

Requirement. Pilot under instruction shall brief and lead. Review all previously discussed maneuvers.

AA-216 0.8 R 1 F-5

Goal. Offensive and defensive maneuvering against a dissimilar aircraft.

Requirement. Practice first move options from offensive and defensive setups. Emphasis on quick kills and bugouts.

External Syllabus Support. One dissimilar adversary(CAT2/3)

AA-217 0.8 R 1 F-5

Goal. Introduce neutral maneuvering against a dissimilar aircraft.

Requirement. Practice first move options from neutral setup. Emphasis on ablility to drive fight, quick kills and bugouts.

External Syllabus Support. One dissimilar adversary(CAT4).

AA-218 0.8 R 1 F-5

Goal. Introduce neutral and offensive maneuvering against a superior aircraft.

Requirement. Practice first move options from neutral and offensive setups. Emphasis on quick kills, survivability and bug outs.

External Syllabus Support. One dissimilar adversary(CAT4).

AA-219 0.8 R 3 F-5

Goal. Introduce multi-bogey environment through 1v1v1 engagements.

Requirement. Perform 1v1v1 engagements from neutral setups, emphasis on look out doctrine, energy management, weapons employment, fuel management and bug outs.

AA-220 0.8 R 1 F-5

Goal. Introduce offensive and defensive maneuvering against a section of bogies.

Requirement. Practice single ship offensive and defensive maneuvering from neutral and offensive setups.

External Syllabus Support. 2 dissimilar adversaries.

3. Air Intercept

a. Purpose. Introduce low altitude and section intercept procedures in the F-5.

b. General.

(1) Air intercept sorties should be flown on the TACTS range to the maximum extent possible.

(2) Captive missiles should be carried on each flight.

(3) Minimum altitude: 1,000 ft AGL day, 5,000 ft AGL night.

(4) Bogies may be dissimilar aircraft.

(5) Three successful intercepts are required for completion of each flight.

c. Flight Training (2 Flight, 2.0 Hours)

AI-230 1.0 R 2 F-5E

Goal. Obtain proficiency in analyzing and intercepting an unknown target.

Requirement. Conduct forward quarter attacks with stern reattacks from a forward quarter setup against an unknown target with 30NM separation, the fighter will be based at 15,000 ft/400 knots with the bogey at 18,000 ft/400 knots. The bogey will leave assigned cap at an unknown heading, altitude, and airspeed within the following parameters: +/- 30 degrees heading, +/- 5,000 ft altitude, and +/- 100 knots airspeed. One intercept should be made with target below 5,000 ft MSL.

AI-231 1.0 R 2 F-5E

Goal. Introduce section intercept tactics and procedures against a known number of adversaries.

Requirement. Perform multiple forward quarter attacks with rear quarter re-attacks against multiple bogeys in line abreast or trail formation. Fighters will be based at 15,000 ft/350 knots with bogeys at 18,000 ft/350 knots. The bogies will leave the assigned CAP at an unknown heading, altitude and airspeed, within the following parameters: +- 30 degrees heading, +- 5,000 feet altitude, and +- 100 knots airspeed. Bogies should remain within 10 NM's of each other in trail formation.

External Syllabus Support. Two similar/dissimilar adversaries.

4. Navigation.

a. Purpose. Introduce the pilot to low altitude flying and visual navigation.

b. General.

(1) Emphasize the low altitude flight characteristics and aircraft handling of the F-5 in preparation for the LAT stage.

(2) Minumum altitude is 500ft AGL.

c. Flight Training (1 Flight, 0.8 Hours).

NAV-240 0.8 R 2 F-5/1 F-5F

Goal. Plan and execute a low level route utilizing DR navigation and visual checkpoints.

Requirement. Thoroughly plan a low level route. Emphasis on aircraft handling, fuel management , and map interpretation.

5. Low Altitude Tactics

a. Purpose. To develop proficiency in low level, high speed flight on a closed LAT circuit; to include level high "g" turns, ridgeline crossings, terrain masking and low altitude section maneuvering. The pilot should be designated as LAT qualified upon successful completion of this stage.

b. General.

(1) Flight conducted on an authorized low altitude training circuit. The circuit should be 10 to 15 minutes in length.

(2) Prerequisites for this stage are succesful completion of NAV-240 and the appropriate LAT lectures.

(3) Initial qualification or requalification on LAT-253.

(4) Pilots current and qualified in LAT do not require a chase. T&R Manual Volume 1 describes currency requirements.

(5) Various types of terrain should be utilized where feasible.

(6) Absolute minimum altitude will be 500 ft AGl.

(7) Pilots will complete each mission succesfully in the sequence listed.

(8) It should be emphasized that the concept of low altitude tactics is designed around "comfort level" (CL) and "minimum altitude capable" (MAC). Altitudes achieved are not to be considered as criteria for success.

c. Flight Training (4 Flights, 3.2 Hours)

LAT-250 0.8 R 2 F-5/1 F-5F

Goal. Introduce pilot to low altitude tactics (LAT) in the F-5 with emphasis on terrain masking, ridgeline crossing technique, NAV turns and defensive maneuvers at CL.

Requirement. Conduct a LAT flight to include: straight and level accelerations/decelerations, NAV turns, defensive break turns at comfort level, ridgeline crossings and terrain masking.

LAT-251 0.8 R 2 F-5/1 F-5F

Goal. Develop proficiency in single section LAT.

Requirement. Perform all maneuvers from LAT-250. Second circuit performed comm out, pilot under instruction is responsible for navigation.

LAT-252 0.8 R 2 F-5

Goal. Introduce the pilot to section LAT.

Requirement. Perform all maneuvers from LAT-250 in section. Fly the first circuit as lead and the second circuit as wingman.

LAT-253 0.8 R,E 2 F-5

Goal. Develop proficiency in section LAT. At the completion of this flight the commanding officer can designate the pilot LAT qualified.

Requirement. Repeat LAT-252.

1643. MISSION QUALIFICATION TRAINING

1. Air-to-Air

a. Purpose. To develop proficiency in the employment of known or potential enemy formations, engaged tactics, and armament.

b. General

(1) GCI and separate frequencies should be utilized to the greatest extent possible.

(2) TACTS should be utilized whenever possible.

(3) Upon successful completion of AA-300 through AA-305E the pilot is considered ACM qualified and can conduct ACM per the T&R Manual, Volume 1.

(4) Upon succesful completion of the entire mission qualified syllabus the pilot shall be designated (at the discretion of the commanding officer) an adversary tactics pilot and can conduct ACM, per T&R Manual, Volume 1.

(5) Until a pilot is ACM qualified all ACM flight must be lead by a designated ATI.

(6) U.S. tactics will not be used unless specifically requested by adversaries.

c. Flight Training (7 Flights, 5.6 Hours)

AA-300 0.8 R 2 F-5

Goal. Introduce known and potential Fishbed intercept tactics, emphasis on Fishbed formations.

Requirement. Perform intercepts and canned setups to engagements under GCI control (if available). Wingman concentrate on flying Fishbed formations until cleared to engage by lead. Emphasis on proper visual employment of Fishbed armament.

External Syllabus Support. Two dissimilar adversaries.

AA-301 0.8 R 2 F-5

Goal. Introduce Fishbed decoy tactics and separate vector attacks against adversary CAPS/SWEEPS.

Requirement. Perform intercepts (and canned setups) to engagements under GCI control (if available). Emphasis on decoy tactics and separate vector considerations.

External Syllabus Support. Two dissimilar adversaries.

AA-302 0.8 R 2-4 F-5

Goal. Introduce basic Flogger close control tactics and forward quarter IR tactics/countertactics against adversary CAPS/SWEEPS.

Requirement. Perform intercepts under GCI control (if available) to engagements, emphasis on known Flogger tactics, introduce known or suspected forward quarter IR tactics/countertactics, and use of F-5 to simulate Flogger.

External Syllabus Support. Two dissimilar adversaries.

AA-303 0.8 R 2-4 F-5

Goal. Practice Flogger intercept and forward quarter engagement tactics.

Requirement. Perform known radar tactics during intercept to forward quarter engagement. Emphasis on tactical cooperation, situation awareness, use of F-5 to simulate Flogger, and proper employment of Flogger forward quarter armament.

External Syllabus Support. Two dissimilar adversaries.

AA-304 0.8 R 4 F-5

Goal. Conduct Fishbed or Flogger tactics under GCI control (if available).

Requirement. Perform known or potential Fishbed or Flogger style intercepts to engagements. Emphasis on proper employment of section/division against adversary CAP. Practice sweeps, section integrity, visual search techniques, and engaged tactics.

External Syllabus Support. Two to four dissimilar adversaries.

AA-305 0.8 R,E 2-6 F-5

Goal. Evaluate advanced Fishbed and Flogger intercept tactics.

Requirement. F-5 will use advanced Fishbed and Flogger tactics on all intercepts. Maximum intercept training is desired. Pilot under instruction will brief and lead.

External Syllabus Support. Two to four dissimilar adversaries.

AA-306 0.8 R 2-6 F-5

Goal. Conduct intercepts and/or visual setups against multiple adversaries utilizing multiple sections or divisions.

Requirement. Conduct multiple engagements in a sterile environment, emphasizing shots of opportunity, disengagement, survivability and section or division integrity.

External Syllabus Support. Two to six dissimilar adversaries.

2. Surface Attack

a. Purpose. Develop proficiency in employing the F-5 in the surface attack role.

b. General

(1) Emphasis will be placed on developing proficiency in U.S. one non-U.S. style tactics.

(2) No ordnance will be carried other than captive AA missile.

(3) ECM should be used (if available and requested).

(4) Flight below 500 ft AGL is not authorized.

c. Flight Training (1 Flight, 0.8 Hours)

SA-320 0.8 R 2(or more)F-5

Goal. Develop proficiency in employing U.S. and non-U.S. section tactics against a surface target(s).

Requirement. Perform multiple attacks against a surface target(s). Emphasize using known or potential non-U.S. tactics. Should include, but is not limited to, timed attacks with sequential reattacks.

3. Helicopter Attack

a. Purpose. Develop proficiency in employing the F-5 against a helicopter threat.

b. General.

(1) All flights will adhere to TR's and ACM flights requirements per T&R Manual, Volume 1 and OPNAVINST 3710.7.

(2) Pilot must be ACM qualified as outlined in this chapter.

(3) Pilot must be LAT qualified as outlined in this chapter and LAT current as outlined in T&R Manual, Volume 1.

(4) Pilot must brief/debrief coordination and control procedures, threat counter procedures, and offensive procedures during their individual briefs and during the common debrief.

(5) Emphasis will be placed on developing prodiciency in U.S. and non U.S. tactics as well as simulated employment of U.S. and non U.S. armament.

(6) These events should be flown in conjunction with related helicopter ACM syllabus events.

c. Flight Training (3 Flights, 2.4 Hours)

HA-330 0.8 R 1 F-5

Goal. Introduce 1v1 maneuvering in the F-5 against a maneuvering helicopter.

Requirement. Conduct visual attacks against a helicopter utilizing either air-to-air or air-to-ground ordnance (simulated).

External Syllabus Support. One helicopter.

HA-331 0.8 R,E 2 F-5

Goal. Develop proficiency in employing section tactics against multiple maneuvering helicopters.

Requirement. Conduct visual attacks against multiple maneuvering helicopters. Emphasize the use of non-U.S. tactics and armament (unless otherwise requested).

External Syllabus Support. Two or more helicopters.

HA-332 0.8 R,E 1 F-5

Goal. Develop proficiency in employing single ship tactics against multiple maneuvering helicopters.

Requirement. Conduct visual attacks against multiple maneuvering helicopters utilizing single ship tactics. Emphasize the use of non U.S. tactics and armament (unless otherwise requested).

External Syllabus Support. Two or more helicopters.

4. Strike Intercept.

a. Purpose. Develop proficiency in employing U.S. and non-U.S. tactics and armament against multi-plane strike formations in a medium-to-low altitude environment.

b. General.

(1) Flight below 500 feet AGL is not authorized.

(2) Special attention shall be paid to the T&R's listed in the T&R Manual.

(3) Pilots must brief/debrief coordination and control procedures, threat counter procudures, and offensive procedures during their individual briefs and during the common debrief.

(4) Special emphasis shall be placed on developing proficiency in the use of non-U.S. tactics and weapons employment.

(5) Use of GCI is encouraged but not required.

c. Flight Training (2 Flights, 1.6 Hours).

SI-340 0.8 R 1 or more F-5

Goal. Introduce single ship/section tactics against multi-plane strike formations.

Requirement. Conduct visual attacks against low-to-medium altitude multi-plane strike formations during ingress or egress. Emphasize the use of non-U.S. tactics and weapons employment.

External Syllabus Support. Four or more dissimilar adversaries.

SI-341 0.8 R 3 or more F-5

Goal. Develop proficiency in employing division tactics against multi-plane strike formations.

Requirement. Utilizing non-U.S. concepts of vital area defense, conduct visual attack against medium-to-low altitude multi-plane strike formations. Emphasize the use of non-U.S. division tactics and weapons employment.

External Syllabus Support. Four or more dissimilar adversaries.

1644. FULL-MISSION QUALIFICATION TRAINING

1. Air-to-Air

a. Purpose. Further develop proficiency in utilizing threat tactics to successfully intercept, engage, and disengage from adversary aircraft.

b. General.

(1) Due to the complex nature of these flights, flight leads shall be designated ATI's.

(2) All general comments from previous air-to-air training apply to this stage.

(3) GCI should be used to enhance realism.

c. Flight Training (6 Flights, 4.8 Hours).

AA-410 0.8 R 4 F-5

Goal. Introduce composite force tactics.

Requirement. Using either U.S. or non-U.S. composite force tactics, intercept, engage, and negate adversary air superiority force. Emphasize composite force consideration, engaged tactics, and weapons employment.

External Syllabus Support. Two to four friendly strike aircraft and two to four dissimilar adversaries.

AA-411 0.8 R 4-6 F-5

Goal. Practice advanced Fishbed intercept and engagement techniques in a realistic multi-aircraft air superiority environment.

Requirement. Utilizing known and potential advanced Fishbed tactics; intercept, engage, and disengage from adversary CAP/SWEEPS. Emphasize intercept techniques, and Fishbed armament employment.

External Syllabus Support. Two or more dissimilar adversaries.

AA-412 0.8 R 4-6 F-5

Goal. Practice advance Flogger intercept and engagement techniques in a realistic multi-aircraft air superiority environment.

Requirement. Utilizing known and potential Flogger tactics; intercept, engage, and disengage from adversary CAP/SWEEPS. Emphasize intercept techniques, BVR shot opportunities, disengagement techniques, and Flogger weapons employment.

External Syllabus Support. Two or more dissimilar adversaries.

AA-413 0.8 R 6-8 F-5

Goal. Practice multi-division advanced threat tactics.

Requirement. Utilizing known or potential multi-division advanced threat tactics; intercept, engage, and disengage from adversary CAPS/SWEEPS. Emphasis on tactical cooperation, rapid kills, and situation battle awareness.

External Syllabus Support. Four or more dissimilar adversaries.

AA-414 0.8 R 6-8 F-5

Goal. Practice multi-division advanced threat tactics.

Requirement. Intercept and disengage from adversary CAP/SWEEPS utilizing known or potential multi-division Flogger tactics. Emphasis on BVR shot opportunities, minimum in-close maneuvering,and disengagement techniques.

External Syllabus Support. Four or more dissimilar adversaries.

AA-415 0.8 R 8-12 F-5

Goal. Practice threat squadron tactics.

Requirement. Using known or potential threat squadron tactics, intercept and negate an adversary air superiority force. Emphasis is on intercept technique, BVR shot opportunities, minimum in close maneuvering, and disengagement techniques.

External Syllabus Support. Four or more dissimilar adversaries.

2. Helicopter Attack

HA-420 0.8 R 2(or more) F-5

Goal. Practice threat tactics against large numbers of helicopters.

Requirement. Conduct visual attacks on multi-plane helo formations. Emphasize use of non-U.S. division tactics, mutal support, direct and sequential attacks. Various SAM threat scenarios should be simulated.

External Syllabus Support. An unknown number of helicopters with or without escort.

3. Anti-Air Warfare.

a. Purpose. Develop proficiency in planning and executing the airborne of an IADS.

b. General.

(1) Due to comlex nature of these flights the mission commander shall be a designated ATI and flight leads shall be designated ATP's.

(2) When appropriate, non-U.S. tactics shall be utilized.

(3) All general comments from previous air-to-air training apply to this stage.

c. Flight Training (2 Flights, 1.6 Hours)

AAW-430 0.8 R 2 or more F-5

Goal. Develop proficiency in simulating U.S. and non-U.S. strike escort tactics.

Requirement. Plan and execute a coordinated strike into a simulated sophisticated threat environment. Emphasize(when appropriate) non-U.S. strike escort tactics.

External Syllabus Support. Two or more friendly strike aircraft vs two or more dissimilar adversaries.

AAW-431 0.8 R 2 or more F-5

Goal. With the help of a gound based air defense unit, defend a vital area against a coordinated strike.

Requirement. Plan and execute a non-U.S. style IADS. Emphasize the use of SAM's in the IADS. When appropriate, utilize non-U.S. concepts of vital area defense.

External Syllabus Support. An unknown number of dissimilar adversaries.

1650. INSTRUCTOR AND SPECIAL FLIGHT PERFORMANCE REQUIREMENTS

1651. ADVERSARY TACTICS INSTRUCTOR COURSE

1. Purpose. To certify pilots capable of conducting ground and airborne instruction of adversary air combat maneuvers, threat weapons, surface attack tactics, and help attack tactics as well as the flight envelope of the F-5.

2. General

a. Conduct ground and airborne instruction of air combat maneuvers and the F-5 envelopes.

b. Conduct ground and airborne instruction in use of the F-5 as a threat simulator.

c. Brief, lead, and debrief (as and adversary) tactical flights against Fleet and Reserve squadrons.

d. Fulfill the safety/leadership requirements for ACM per T&R Manual, Volume 1 and OPNAVINST 3710.7.

e. Squadron academics syllabus:

(1) F-5 flight characteristics/limitations.

(2) Briefing and debriefing.

(3) F-5 as a threat simulator.

(4) Threat formations and tactics.

(5) Threat air-to-air weapons.

(6) ACM ROE.

(7) Examination.

3. Flight Training (3 Flights, 2.4 Hours)

a. Flight syllabus. An F-5 ATI will conduct the build-up phase to prepare the prospective ATI for certification by the commanding officer. The prospective ATI will demonstrate the capability to: brief, debrief, and instruct basic tactical maneuvers in a 1v1, and a multi-plane scenario. The build-up should include the following events:

(1) 1v1 similar - offensive and defensive setups.

(2) 1v1 similar - neutral setups.

(3) 1v1 dissimilar - offensive, defensive, and neutral setups.

(4) One (1) 2v2 or greater - emphasis on threat formation, tactics, and weapon simulation and debrief.

(5) One (1) 4vX utilizing complex flogger tactics with emphasis on intercept presentation and debrief.

b. The prospective ATI will demonstrate to the squadron instructor the ability to brief, lead, and debrief the following flights:

AA-500 0.8 E 1 F-5

Goal. To evaluate the prospective ATI's ability to brief, conduct and debrief a 1v1 dissimilar/similar flight.

Requirement. Conduct eye ball calibration drill, guns weave exercise, at least one offensive, defensive, or neutral setup, and guns defense. Additional emphasis placed on the brief and debrief.

External syllabus support. One similar or dissimilar adversary.

AA-501 0.8 E 2 F-5

Goal. To evaluate the prospective ATI's ability to successfully/safely conduct and control, brief and debrief a 2v2 dissimilar flight.

Requirement. Conduct at least two setups from beyond visual range utilizing GCI or TACTS (if available). Emphasis should be placed on pre-merge radar missile employment and defense to a IR reattack or disengagement. Conduct at least one visual setup with emphasis placed on quick kills and disengagement. Additional emphasis placed on the brief and debrief.

External syllabus support. Two dissimilar advarseries.

AA-502 0.8 E 2-4 F-5

Goal. To evaluate the prospective ATI's ability to successfully/safely conduct and control, brief and debrief a multi-aircraft dissimilar flight.

Requirement. Conduct at least two setups from beyond visual range with emphasis on threat pre-merge formations and tactics, radar missile employment and defense to a IR missile reattack or disengagement. Additional emphasis placed on the brief and debrief.

External syllabus support. Two dissimilar advarseries.

c. Prerequisites.

(1) Secret Clearence.

(2) Minimum or 100 hours in the F-5.

(3) Designated ATP/Division Leader.

(4) Completed course requirements.

d. Recertification. Former F-21 ATI's or Top Gun adversary course graduates will fly an AA-501 Evaluated mission demonstrating the ability to lead, brief, and debrief.

e. Prerequisites.

(1) Secret Clearence.

(2) Minimum or 100 hours in the F-5.

(3) Designated ATP/Division Leader.

(4) Completed course requirements.

1652. LOW ALTITUDE TACTICS (INSTRUCTOR) COURSE

1. Purpose. Produce an instructor capable of teaching low altitude tactics in a safe and progressive manner commensurate with an individual pilot's ability. The instructor will be able to recognize degradation in performance in low altitude tactics so that an individual will not be placed in an unsafe situation. The LAT(I) will establish minimum altitudes for various phases of low altitude flight on the basis of an individual's recent demonstrated performance, but not to exceed the T&R syllabus absolute minimum altitude.

2. General

a. Squadron academics syllabus

(1) LAT concepts.

(2) LAT considerations.

(3) Formations.

(3) Advanced maneuvering.

(4) Instructor techniques.

3. Flight Training (2 Flights, 1.6 Hours)

LAT-510 0.8 E 2 F-5E/1 F-5F

Goal. Evaluate prospective LAT(I)'s knowledge of single aircraft LAT concepts and considerations to include the ability to safely conduct LAT.

Requirement. As a chased or single F-5F, conduct a LAT flight to include: straight and level acceleration/ decelerations, minimum altitude capable with "S" turns, defensive break turns at a comfort level, ridgeline crossing, and terrain masking.

LAT-511 0.8 R 2 F-5

Goal. Evaluate prospective LAT(I)'s ability to brief, lead, and debrief section and chased maneuvering in the LAT envionment.

Requirement. On first lap LAT(I) flies chase position on evaluator, on successive laps LAT(I) acts as section lead and conducts section maneuvering. Emphasis placed on brief, debrief, and safe conduct.

3. Post Maintenance Check Flight Instructor

a. Purpose. Provide instructor pilots with standardized procedures and instructional techniques required to successfully complete a PMCF.

b. General. The syllabus consists of 1 hour of classroom instruction, and a written exam.

c. Flight Training (2 Flights, 1.6 Hours)

PMCF-520 0.8 2 F-5/1 F-5F

Goal. Introduce normal and emergency PMCF procedures with PUI chased by instructor.

Requirement. Introduce ground and airborne PMCF procedures to include preglight start, takeoff, and in flight data recording.

PMCF-521 0.8 R 1 F-5

Goal. Allow PUI to review all ground and airborne functional check flight procedures.

Requirement. As a solo, review all functional check flight procedures to include preflight, start, takeoff, and in flight data.

T&R MANUAL, VOLUME 5

AIRCRAFT: F-5 MOS: 75XX CREW POSITION: PILOT

FLIGHT STAGE	TRAINING CODE	HRS	REFLY INTERVAL	CRP	C	R	REMARKS
MISSION CAPABLE TRAINING							
FAM	99	-.-	-	-.-	X		
	100	0.8	*	3.5	X		
	101	0.8	*	3.5	X		
	102	0.8	*	3.5	X		
	103	0.8	*	3.5	X		
	104	0.8	*	3.5	X	X	
	105	0.8	*	3.5	X	X	
	106	0.8	*	3.5	X	X	
INST	110	1.0	*	3.5	X	X	
AI	120	1.2	*	3.5	X		
	121	1.2	*	3.5	X		
MISSION READY TRAINING							
INST	200	1.0	3	0.5	X	X	
AA	210	0.8	6	0.5	X	X	
	211	0.8	8	0.5	X	X	
	212	0.8	8	0.5	X	X	
	213	0.8	8	0.5	X	X	
	214	0.8	8	0.5	X	X	
	215	0.8	8	0.7	X	X	
	216	0.8	6	0.5	X	X	
	217	0.8	6	0.5	X	X	
	218	0.8	6	0.5	X	X	
	219	0.8	8	0.5	X	X	
	220	0.8	8	0.5	X	X	
AI	230	1.0	9	0.5	X	X	
	231	1.0	9	0.5	X	X	
NAV	240	0.8	C	0.5	X	X	
LAT	250	0.8	6	0.5	X	X	
	251	0.8	6	0.5	X	X	
	252	0.8	6	0.5	X	X	
	253	0.8	6	0.5	X	X	

FLIGHT STAGE	TRAINING CODE	HRS	REFLY INTERVAL	CRP	C	R	REMARKS
MISSION QUALIFICATION TRAINING							
AA	300	0.8	8	1.0	X	X	
	301	0.8	8	1.0	X	X	
	302	0.8	8	1.0	X	X	
	303	0.8	8	1.0	X	X	
	304	0.8	8	1.0	X	X	
	305	0.8	8	2.0	X	X	E
	306	0.8	8	1.0	X	X	
SA	320	0.8	C	1.0	X	X	
HA	330	0.8	6	1.0	X	X	
	331	0.8	6	1.0	X	X	
	332	0.8	6	2.0	X	X	E
SI	340	0.8	C	1.0	X	X	
	341	0.8	C	1.0	X	X	
FULL-MISSION QUALIFICATION TRAINING							
AA	410	0.8	8	1.5	X	X	
	411	0.8	8	1.5	X	X	
	412	0.8	8	1.5	X	X	
	413	0.8	8	1.5	X	X	
	414	0.8	8	2.0	X	X	
	415	0.8	8	2.0	X	X	
HA	420	0.8	C	2.0	X	X	
AAW	430	0.8	C	1.5	X	X	
	431	0.8	C	1.5	X	X	
INSTRUCTOR AND SPECIAL FLIGHT REQUIREMENTS							
ATI	500	0.8					E
	501	0.8					E
	502	0.8					E
LATI	510	0.8					E
	511	0.8					E
PMCF	520	0.8					
	521	0.8				X	
REQUIRED TRAINING FLIGHTS							
REQ	600	1.0	C			X	
	601	1.0	C			X	

PILOT FLIGHT UPADATE CHAIN

STAGE	FLIGHT	FLIGHT UPDATED
INST	200	
AA	210	
	211	210
	212	210,211
	213	210,211,212
	214	210,211,212,213
	215	210,211,212,213,214
	216	
	217	216
	218	217,217
	219	
	220	219
AI	230	
	231	230
NAV	240	
LAT	250	
	251	250
	252	250,251
	253	250,251,252
AA	300	230,231
	301	230,231,300
	302	230,231,300,301
	303	230,231,300,301,302
	304	230,231,300,301,302,303
	305	230,231,300,301,302,303,304
	306	230,231,300,301,302,303,304,305
SA	320	
HA	330	250,251
	331	250,251,330
	332	250,251,330,331
SI	340	
	341	340
AA	410	230,231
	411	230,231,410
	412	230,231,410,411
	413	230,231,410,411,412
	414	230,231,410,411,412,413
	415	230,231,410,411,412,413,414
HA	420	230,231,252,253,330,331,332
AAW	430	230,231,410,411,412,413,414
	431	230,231,410,411,412,413,414,430

STAGE	FLIGHT	FLIGHT UPDATED
ATI	500	
	501	
	502	
LATI	510	
	511	
PMCF	520	
	521	

CHAPTER 13

UH-1N (SAR) PILOT

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 12

UH-1N (SAR) PILOT

1300. PROGRAMS OF INSTRUCTION (POI) FOR CONVERSION SAR PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground School	SOMS
2-3	Mission Ready Training	SOMS
4-7	Mission Qualification Training	SOMS
8	Full Mission Qualification Train	SOMS

1301. POI FOR REFRESHER SAR PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Ground School	SOMS
2-3	Mission Ready Training	SOMS
4-5	Mission Qualification Training	SOMS
6	Full Mission Qualification	SOMS

1302. POI FOR INSTRUCTOR SAR PILOT

WEEKS	COURSE/PHASE	ACTIVITY
1	Instructor Training	SOMS
1	Phase I NVGI Training	SOMS

1303. POI FOR SPECIAL FLIGHTS

WEEKS	COURSE/PHASE	ACTIVITY
N/A	Annual Evaluation Flights	SOMS
1	Formation Flight	SOMS
2	Night Vision Goggle Flights	SOMS

1304. PREREQUISITES. Naval aviators assigned to UH-1N SAR billets shall be NATOPS qualified in model and preferably second tour UH-1 pilots. Aviators who are not qualified in model shall complete the appropriate combat capable training at the FRS as set forth in Chapter 6, MCO P3500.16.

1310. GROUND TRAINING COURSES OF INSTRUCTION

COURSE/PHASE	ACTIVITY
NITELAB	MAWTS-1

1311. SQUADRON LEVEL TRAINING

Aircraft Systems
Emergency Procedures
Weight, Balance, and Performance Data
All Weather Operations

Communications
Passenger Briefing
Local Course Rules
Aircrew Coordination and Responsibilities
NATOPS Open and Closed Book Examinations
Search Planning
SAR Equipment and Techniques
SAR Publications
SC, SMC, OSC, and SRU Responsibilities
Command SAR Plans and SOP
Night Operations Course

1320. FLIGHT TRAINING: CONVERSION SAR PILOT

1. Mission Capable Training. See paragraph 1304.

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
NATOPS Qualification	-	-.-	60.0
Familiarization	2	3.0	2.0
Instruments	1	1.5	1.0
Navigation	2	3.0	2.0
Search and Rescue	3	4.5	3.0
SAR Check	1	1.5	2.0
Total	**9**	**13.5**	**70.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Confined Area Landings	2	3.0	1.0
Search and Rescue	14	20.0	13.0
Navigation	2	4.0	1.0
Total	**18**	**27.0**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
SAR HAC Check	**3**	**4.5**	**15.0**
Total for Conversion Pilot	**30**	**45.0**	**100.0**

1321. REFRESHER SAR PILOT

1. Mission Capable Training. See paragraph 1304.

2. Mission Ready Training

STAGE	FLIGHTS	HOURS
NATOPS Qualification	-	-.-
Familiarization	2	3.0
Instruments	1	1.5
Navigation	2	3.0

SAR Check	1	1.5
Total	**6**	**9.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS
Confined Area Landings	2	3.0
Search and Rescue	8	12.0
Navigation	2	4.0
Total	**12**	**19.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR HAC Check	**2**	**3.0**
Total for Refresher Pilot	**20**	**31.0**

1322. INSTRUCTOR UNDER TRAINING (IUT)

STAGE	FLIGHTS	HOURS
Familiarization	1	1.0
Instrument/Navigation	1	1.0
Confined Area Landings/SAR	1	1.0
Total	**3**	**3.0**

1323. SPECIAL FLIGHTS TRAINING

STAGE	FLIGHTS	HOURS
Annual Evaluation Flights	2	3.0
Formation Flight	1	1.5
Night Vision Devices	8	12.0
Total	**11**	**16.5**

1330. SIMULATOR TRAINING. Not applicable unless an approved UH-1N Instrument Trainer is available. Those flights which may be flown are indicated by an "S".

1340. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Currently UH-1N Qualified. When assigned to a UH-1N SAR billet, a naval aviator who is currently UH-1N NATOPS qualified shall complete the Conversion POI unless previously UH-1N (SAR) qualified.

b. Prior UH-1N (SAR) Qualified. When assigned to a UH-1N SAR billet, a naval aviator who is currently UH-1N NATOPS qualified, and who was previously UH-1N (SAR) qualified shall complete the refresher POI.

c. Not Currently UH-1N Qualified. When assigned to a UH-1N SAR billet, a naval aviator who is not currently UH-1N NATOPS qualified shall complete conversion or refresher training at the FRS, as set forth in MCO P3500.16, Chapter 6, then complete the appropriate POI as set forth above.

d. Progression. PUI should complete all events in each phase before progressing (i.e., 100 series complete, then 200 series complete, etc.).

e. Pilots **shall** fly events annotated with an "NS" with Night Vision Goggles, for the entire flight. Minimum crew includes a qualified Aerial Observer for all events annotated with an "NS". Pilots **may** fly events annotated with "(NS)" with the option of using NVG's.

2. Crew Requirement/Position Indicators. Each flight stage description indicates which SAR crewmembers are required and in which seat the PUI and IP will sit: e.g., PUI/IP (PUI left seat, IP right seat) or IP/PUI/CC/RA (IP left seat, PUI right seat, crew chief and rescue aircrewman required).

3. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

1341. MISSION READY TRAINING

1. General

a. Training conducted during the Mission Ready Phase should concentrate on preparing the PUI to serve as a copilot during actual SAR missions. PUI should complete all 200 series events before commencing 300 series phase.

b. Prior to flight, the PUI shall have completed the NATOPS open book examination within the previous 12 months.

c. Prior to SARX-240, a locally prepared reading list which shall include appropriate sections from the NATOPS manual, NWP 19-1, NWP-19, NWP 55-8-SAR, the unit SOP, and other locally pertinent publications shall be completed.

2. Familiarization

a. Purpose. To review flight characteristics, aircraft systems, limitations, emergency procedures and local course rules. To refine proficiency in all maneuvers contained in the familiarization stage.

b. General. Prior to FAM-200, conduct a thorough preflight/postflight inspection and cockpit familiarization to include blindfold cockpit check (emphasize SAR peculiar equipment). Flights will terminate with an instrument approach where practical.

c. Crew Requirement. PUI/IP/CC.

d. Flight Training (2 Flights, 3.0 Hours)

FAM-200	1.5	C,R 1 ACFT

Goal. Review normal procedures, basic CAL techniques, and introduce local course rules.

Requirement

(1) Introduce. Local course rules.

(2) Review. Start/Shutdown, normal takeoffs/landings, no hover takeoffs/landings, sliding takeoffs/landings, steep/precision approaches, power checks, wave-offs, high speed approaches, quick stops, tail rotor malfunctions, autorotations, low work, hover/taxi autorotations, engine failure, and use of checklists.

(3) Brief/Discuss. Selected emergency procedures, weight and balance, crew coordination, power checks, and course rules. Emphasize copilot responsibilities during confined area and mountainous operations.

FAM-201 1.5 C,R 1 ACFT N

Goal. Review normal procedures, basic CAL techniques and course rules at night.

Requirement

(1) Review. FAM-200 at night.

(2) Brief/Discuss. Night course rules and electrical failures.

3. Instruments

a. Purpose. To maintain proficiency in instrument flight skills and to introduce instrument procedures applicable to the local mission.

b. General. Instrument flights, whether day or night, should be conducted under actual conditions where practical or hooded in the case of simulated instrument flight.

c. Crew Requirement. PUI/IP/QO.

d. Flight Training (1 Flight, 1.5 Hours)

INST-210 1.5 C,R (S) 1 ACFT (N)

Goal. Review instrument procedures applicable to the local area.

Requirement

(1) Review. Flight planning, basic airwork, climbs/descents, navigation procedures, holding, instrument approaches (precision and nonprecision), and equipment use.

(2) Brief/Discuss. FLIP documents & local instrument procedures (emphasizing those applicable to actual SAR missions) and emergency procedures applicable to instrument flight.

4. Navigation

a. Purpose. To become familiar with navigation in the local mission area during day and night operations.

b. Crew Requirement. PUI/IP.

c. Flight Training (2 Flights, 3.0 Hours)

NAV-220 1.5 C,R 1 ACFT

Goal. Introduce the PUI to navigational procedures in the local operating area.

Requirement

(1) Introduce. Hospitals, roads, training sites, and other landmarks in the local operating area.

(2) Review. Use of UHF-DF.

(3) Brief/Discuss. UHF-DF, maps, charts, and other aids to navigation in the local operating area. Emphasize the effects of weather and other variables on navigation.

NAV-221 1.5 C,R 1 ACFT N

Goal. Introduce navigation in the local mission area at night.

Requirement. Repeat NAV-220 at night.

5. Search and Rescue (SAR)

a. Purpose. To introduce basic SAR techniques and practice the copilot's duties during search and rescue operations.

b. Crew Requirement. PUI/IP/CC/RA

c. Flight Training (3 Flights, 4.5 Hours)

SAR-230 1.5 C 1 ACFT

Goal. Introduce basic search patterns, local air ambulance, and airfield mishap procedures.

Requirement

(1) Introduce

(a) Contour, trackline, creeping line, parallel, sector, and square search patterns.

(b) Procedures for airfield mishaps and other local air ambulance missions.

(2) Brief/Discuss. Basic search patterns, copilot's duties during air ambulance operations, aircraft equipment, local communications procedures, and other mission response/execution procedures.

SAR-231 1.5 C 1 ACFT

Goal. Introduce rappel, hoist and short haul operations.

Requirement

(1) Introduce. Copilot's duties during rappel, hoist, and short haul operations.

(2) Review. Any 2 search patterns.

(3) Brief/Discuss. Procedures for rappel, hoist, and short haul operations including emergency procedures.

SAR-232 1.5 C 1 ACFT N

Goal. Introduce copilot's duties during rappel, hoist and short haul operations at night.

Requirement

(1) Introduce. Techniques for standoff lighting while hovering and HOGE operations from the left seat.

(2) Review. SAR-231 at night practicing 2 different search patterns.

(3) Brief/Discuss. Lighting for night searches and rescues.

6. SAR Check

a. Purpose. To review all previous areas of instruction and evaluate the PUI's ability to perform copilot duties during search and rescue operations. Prior to H2P designation pilots shall be NATOPS qualified (i.e., PQM).

b. Crew Requirement. PUI/IP/CC/RA.

c. Flight Training (1 Flight, 1.5 Hours)

SARX-240 1.5 C,R E 1 ACFT (N)

Goal. SAR evaluation flight.

Requirement. PUI must demonstrate a thorough knowledge of the aircraft systems, emergency procedures, normal operating procedures from the left seat, and basic search and rescue procedures. Emphasize copilot responsibilities during all maneuvers.

1342. MISSION QUALIFICATION TRAINING

1. Confined Area Landings (CAL)

a. Purpose. To refine proficiency in confined and mountainous area flight techniques.

b. Crew Requirement. IP/PUI/CC.

c. Flight Training (2 Flights, 3.0 Hours)

CAL-300 1.5 C,R 1 ACFT

Goal. Practice confined and mountainous area landings.

Requirement

(1) Review

(a) Power checks, one skid landings, downwind landings, slope landings, minimum rotor clearance approaches, and HOGE at 50-150 feet AGL.

(b) Approach planning, precision/obstacle approaches, max power takeoffs, crosswind/no-hover landings, waveoffs, power control, area navigation, and landing zone selection/ identification in rough or mountainous terrain (including the use of unprepared landing sites where available).

(2) Brief/Discuss. Crew coordination, power checks, mountain winds, landing site evaluation, power settling, effects of high altitude, turbulent air flight techniques, and weather.

CAL-301 1.5 C,R 1 ACFT N

Goal. Practice confined and mountainous area landings at night.

Requirement

(1) Review. CAL-300 at night and refine the use of aircraft lighting.

(2) Brief/Discuss. Interior and exterior aircraft lighting including the SX-16 Nightsun.

2. Search and Rescue (SAR)

a. Purpose. To develop proficiency in inland search and rescue techniques. To further refine proficiency in confined area and mountainous operations.

b. Crew Requirement. IP/PUI/CC/RA.

c. Flight Training (14 Flights, 20.0 Hours)

SAR-310 1.0 C 1 ACFT

Goal. Introduce rappel operations.

Requirement

(1) Introduce. Rappel operations in a simple environment at 50-150 feet AGL. Emphasize altitude, drift, and yaw control. Perform a minimum of 6 evolutions.

(2) Review. Local area navigation.

(3) Brief/Discuss. Rappel procedures, technique, and emergency procedures.

SAR-311 1.0 C 1 ACFT

Goal. Introduce hoist operations.

Requirement

(1) Introduce. Hoist operations in a simple environment at 50-150 feet AGL. Emphasize altitude, drift, and yaw control. Perform a minimum of 3 evolutions.

(2) Review. Local area navigation.

(3) Brief/Discuss. Hoist procedures, technique, and emergency procedures.

SAR-312 1.5 C,R 1 ACFT

Goal. Practice combined rappel and hoist operations.

Requirement

(1) Review

(a) Combined rappel and hoist operations as dictated by local geographical conditions. Conduct operations at 50-150 feet AGL in a simple environment. Emphasize altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(b) Local area navigation.

(2) Brief/Discuss. Procedures for combined rappel and hoist operations.

SAR-313 1.5 C,R 1 ACFT N

Goal. Practice combined rappel and hoist operations at night.

Requirement

(1) Review. SAR-312 at night.

(2) Brief/Discuss. Illumination techniques including standoff lighting.

SAR-314 1.5 C 1 ACFT

Goal. Introduce rappel and hoist operations in rough terrain.

Requirement

(1) Introduce. Rappel & hoist techniques in mountainous and very confined areas (including ravines & pinnacles where practical). Conduct operations at 50-150 feet AGL, simulating realistic conditions while emphasizing altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(2) Review. One skid landings, slope landings, minimum rotor clearance approaches, and power checks.

(3) Brief/Discuss. Mountainous area flying techniques applicable local communications procedures and other factors affecting rappel & hoist maneuvers in rough terrain.

SAR-315 1.5 C 1 ACFT N

Goal. Introduce rappel and hoist operations in rough terrain at night.

Requirement. Review SAR-314 at night.

SAR-316 1.5 C,R 1 ACFT

Goal. Practice rappel and hoist operations in rough terrain.

Requirement

(1) Review

(a) Rappel and hoist operations in mountainous and very confined areas (including ravines and pinnacles where practical). Conduct operations at 50-150 feet AGL, simulating realistic conditions while emphasizing altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(b) One skid landings, slope landings, minimum rotor clearance approaches, and power checks.

SAR-317 1.5 C,R 1 ACFT N

Goal. Practice rappel and hoist operations in rough terrain at night.

Requirement. Review SAR-316 at night.

SAR-318 1.5 C 1 ACFT

Goal. Introduce rappel and short haul operations.

Requirement

(1) Introduce. Rappel and short haul operations in a simple environment. Emphasize altitude, drift, and yaw control. Perform a minimum of 2 evolutions.

(2) Brief/Discuss. Short haul emergency procedures.

SAR-319 1.5 C,R 1 ACFT

Goal. Practice rappel and short haul operations in rough terrain.

Requirement

(1) Review. SAR-318 in rough terrain.

(2) Brief/Discuss. Weather, altitude, aircraft limitations, and other factors affecting short hauls in rough terrain.

SAR-320 1.5 C 1 ACFT N

Goal. Introduce rappel and short haul operations at night.

Requirement. Review SAR-318 at night, emphasizing lighting techniques.

SAR-321 1.5 C,R 1 ACFT N

Goal. Practice rappel and short haul operations in rough terrain at night.

Requirement. Review SAR-319 at night, emphasizing lighting techniques.

SAR-322 1.5 C,R 1 ACFT

Goal. Practice all SAR procedures during a simulated SAR scenario.

Requirement

(1) Review. Using a scenario, practice aerial search patterns, one short haul, one rappel and hoist maneuver, communications, navigation, and all other SAR mission areas.

(2) Brief/Discuss. Search pattern types, air ambulance procedures, communications, and required documentation as required.

SAR-323 1.5 C,R 1 ACFT N

Goal. Practice all SAR procedures during a simulated night SAR scenario.

Requirement. Repeat SAR-322 at night.

3. Navigation

a. Purpose. To become familiar with remote or extended area navigation during day and night operation.

b. Crew Requirement. IP/PUI.

c. Flight Training (2 Flights, 4.0 Hours)

NAV-330 2.0 C,R 1 ACFT

Goal. Familiarize the PUI with remote portions of the unit's area of responsibility or locations outside the area where missions are frequently conducted during daylight.

Requirement. Navigate to remote locations as dictated by local unit requirements.

NAV-331 2.0 C,R 1 ACFT N

Goal. Familiarize the PUI with remote portions of the unit's area of responsibility or locations outside the area where missions are frequently conducted at night.

Requirement. Navigate to remote locations as dictated by local unit requirements at night.

1343. FULL MISSION QUALIFICATION TRAINING

1. SAR HAC Check

a. Purpose. To evaluate proficiency in all flight characteristics peculiar to UH-1N inland search and rescue operations.

b. Crew Requirement. IP/PUI/CC/RA.

c. Flight Training (3 Flights, 4.5 Hours)

HACX-400 1.5 C E 1 ACFT (N)

Goal. SAR HAC evaluation review.

Requirement. Review all SAR procedures, emergency procedures, and normal maneuvers applicable to the local SAR mission.

HACX-401 1.5 C,R E 1 ACFT

Goal. SAR HAC evaluation flight.

Requirement. During a search and rescue scenario(s) the PUI must demonstrate a thorough knowledge of aircraft systems, capabilities, limitations, and emergency procedures. He must demonstrate a working knowledge of the National SAR System and a thorough knowledge of the local SAR mission. The PUI must also possess the ability to operate the aircraft in varying emergency and meteorological conditions (good headwork must be exercised).

HACX-402 1.5 C,R E 1 ACFT N

Goal. Conduct the night portion of the initial SAR HAC evaluation.

Requirement. Repeat HACX-401 at night.

1350. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Qualification. An IUT will be qualified to instruct all flights in a particular stage of training once he has completed the corresponding IUT stage flight.

b. Standardization. Techniques of instruction and standardization will be stressed on all IUT flights. More emphasis should be placed on discussion of standardization criteria and proper procedures than on the actual flying portion of each IUT flight.

c. Roles. The IP will play the role of the PUI and the IUT will instruct to the greatest extent possible on all IUT flights.

d. Crew Requirement. IUT/IP (IUT/IP/CC/RA for IUT-502).

e. Flight Training (3 Flights, 3.0 Hours)

IUT-500 1.0 1 ACFT

Goal. Qualify the IUT to instruct FAM/INST stage flights.

Requirement

(1) Review. All FAM/INST maneuvers with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all FAM/INST maneuvers, standardization criteria, and safety parameters for each.

IUT-501 1.0 1 ACFT

Goal. Qualify the IUT to instruct NAV/CAL stage flights.

Requirement

(1) Review. All NAV/CAL maneuvers with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all NAV/CAL maneuvers, standardization criteria, and safety parameters for each.

IUT-502 1.0 1 ACFT

Goal. Qualify the IUT to instruct SAR stage flights.

Requirement

(1) Review. All SAR maneuvers with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all SAR maneuvers, standardization criteria, and safety parameters for each.

2. Night Vision Devices. Night System Instructor (NSI) training will be conducted per the MAWTS-1 Course Catalog.

1351. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Annual Evaluation Flights

a. Purpose. To conduct annual instrument and NATOPS evaluations.

b. Crew Requirement. IP/HAC/CC and QO for EVAL-600.

c. Flight Training (2 Flights, 3.0 Hours)

EVAL-600 1.5 E (S) 1 ACFT (N)

Goal. Conduct the annual instrument check.

Requirement. Complete the instrument check per current directives. The IP shall be a member of the unit Instrument Flight Board.

EVAL-601 1.5 E 1 ACFT (N)

Goal. Conduct the annual NATOPS evaluation.

Requirement. Complete the NATOPS check per the UH-1N NATOPS manual. This flight may be flown in conjunction with EVAL-600, or HACX-401/402.

2. Formation Flight

a. Purpose. To develop the ability to rendezvous and fly formation maneuvers in support of SAR missions.

b. General. At least one pilot in the flight shall be a designated section leader.

c. Crew Requirement. IP/PUI/CC.

d. Flight Training (1 Flight, 1.5 Hours)

FORM-610 1.5 2 ACFT

Goal. Review formation procedures and maneuvers.

Requirement. Review section takeoffs, parade position, parade turns, climbs and descents, cross-overs, break-up & rendezvous', overruns, lead changes, section landings, cruise position, and scouting line.

3. Night Vision Devices (NVD)(HLL)

a. Purpose. To provide the ability to safely utilize NVD's while conducting search and rescue operations during hours of darkness under High Light Level (HLL) conditions (above .0022 lux) using NVD's.

b. General. The MAWTS-1 Night Operations Course and NITELAB shall be completed prior to conducting NVD flights. The IP shall be a designated Night Systems SAR Instructor (NSSI). Both the crew chief and observer shall be NSQ HHL. At the successful completion of this stage the PUI will NSSQ HLL.

c. Safety

(1) Rappels, hoists, and shorthauls shall not be conducted while any crewmember is wearing NVD's.

(2) Refer to MCO P3500.14, Chapter 9 for NVD policies.

d. Crew Requirement. IP/PUI/CC/O.

e. Prerequisite. SAR-201

f. Flight Training (5 Flights, 7.5 Hours)

NVD-620 1.5 C 1 ACFT NS

Goal. Introduce NVD low work and pattern work.

Requirement

(1) Introduce. The wearing and use of NVD's while performing taxi, basic low work, takeoffs/landings at an unlighted field or remote landing site, quick stops, slide on landings, autorotations (90 degree, 180 degree), single engine failures, and hovering/taxiing autorotations. Minimum of five touch and go landings for completion.

(2) Brief/Discuss. The use of NVD's, goggle and degoggle procedures, NVD battery failure, NVD tube failure, and crew/ cockpit coordination.

Prerequisite. FAM-201

NVD-621 1.5 C,R 1 ACFT NS

Goal. Develop proficiency with NVD's, demonstrate/introduce confined area operations using NVD's.

Requirement

(1) Review. NVD-620

(2) Brief/Discuss. Inadvertent IMC procedures, visual illusions, and night flight techniques.

(3) Demonstrate/Introduce. Confined area approaches, takeoff and landings (to include the application of steep approaches) using NVD's to a lighted or unlit confined area. Use aircraft ground lighting systems; e.g. chemlights.

Prerequisite. NVD-620

NVD-622 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's, demonstrate/introduce mountain area operations using NVD's.

Requirement

(1) Demonstrate. Proficiency with NVD's while conducting CAL operations and navigation procedures.

(2) Introduce. NVD MAL procedures.

(3) Review

(a) Lookout procedures required during navigation and confined area landing. Stress safety procedures, aircraft clearance and terrain effects while using NVD's.

(b) The use of check points, time distance checks, barrier features, prominent terrain features, and map preparation while using NVD's.

(4) Discuss. Slope, grade, and wind considerations, wave-off, and power available versus power required while performing MAL's.

Prerequisite. NVD-621

NVD-623 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's in a HLL environment.

Requirement

(1) Refine. NVD CAL and MAL procedures.

(2) Review. NVD navigational techniques and NVD emergency procedures.

Prerequisite. NVD-622

NVD-624 1.5 C,R E 1 ACFT NS

Goal. Refine crew coordination during a night SAR mission in an HLL environment.

Requirement

(1) Demonstrate. Proficiency in the use of NVD's above .0022 lux.

(2) Review. Procedures for NVD navigation, map preparation, CAL's, MAL's, and NVD emergency procedures.

(3) Brief/Discuss. Crew coordination, comfort levels, situational awareness, and terrain suitability and obstacle clearance.

Prerequisite. NVD-623

4. Night Vision Devices (NVD)(LLL)

a. Purpose. To develop proficiency to conduct operations while using NVD's in the Low Light Level (LLL) environment (below .0022 lux).

b. General

(1) PUI shall be NSSQ HLL.

(2) Upon completion of this stage the PUI will be NSSQ LLL.

c. Ground Training. Review the MAWTS-1 NVD Manual.

d. Crew Requirement. IP/PUI/CC/O

e. Prerequisite. NVD-624

f. Flight Training (3 Flights, 4.5 hours)

NVD-630 1.5 C 1 ACFT NS

Goal. Perform NVD low work and pattern work during low light level conditions.

Requirement

(1) Perform. Basic low work and pattern work.

(2) Brief/Discuss. The use of NVD's during low light level conditions, to include battery failure and crew coordination.

Prerequisite. NVD-624

NVD-631 1.5 C 1 ACFT NS

Goal. Develop proficiency in CAL's, MAL's, and navigation procedures while using NVD's during low light level conditions.

Requirement

(1) Conduct. CAL's, MAL's and navigation flight while using NVD's during low light level conditions.

(2) Brief/Discuss. Comfort levels, map preparation, and crew coordination.

Prerequisite. NVD-630

NVD-632 1.5 C,R E 1 ACFT NS

Goal. To develop proficiency in the low light level environment.

Requirement

(1) Conduct. Simulated SAR mission under low light level environment.

(2) Brief/Discuss. NVD navigation, map preparation, crew coordination, and comfort level.

Prerequisite. NVD-631

1360. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UH-1N (SAR) MOS: 7563 CREW POSITION: PILOT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION READY TRAINING								
FAM	200	1.5	3	1.0	X	X		1 ACFT
	201	1.5	3	1.0	X	X		1 ACFT N
INST	210	1.5	6	1.0	X	X		1 ACFT(N)(S)
NAV	220	1.5	6	1.0	X	X		1 ACFT
	221	1.5	6	1.0	X	X		1 ACFTN
SAR	230	1.5	C	1.0	X			1 ACFT
	231	1.5	3	1.0	X			1 ACFT
	232	1.5	3	1.0	X			1 ACFT N
SARX	240	1.5	C	2.0	X	X	X	1 ACFT (N)
MISSION QUALIFICATION TRAINING								
CAL	300	1.5	1	0.5	X	X		1 ACFT
	301	1.5	1	0.5	X	X		1 ACFTN
SAR	310	1.0	C	0.5	X			1 ACFT
	311	1.0	C	0.5	X			1 ACFT
	312	1.5	6	1.0	X	X		1 ACFT
	313	1.5	6	1.0	X	X		1 ACFT N
	314	1.5	C	1.0	X			1 ACFT
	315	1.5	C	1.0	X			1 ACFT N
	316	1.5	1	1.0	X	X		1 ACFT
	317	1.5	1	1.0	X	X		1 ACFT N
	318	1.5	6	1.0	X			1 ACFT
	319	1.5	1	1.0	X	X		1 ACFT
	320	1.5	6	1.0	X			1 ACFT N
	321	1.5	1	1.0	X	X		1 ACFT N
	322	1.5	3	1.0	X	X		1 ACFT
	323	1.5	3	1.0	X	X		1 ACFT N
NAV	330	2.0	C	1.0	X	X		1 ACFT
	331	2.0	C	1.0	X	X		1 ACFT N
FULL MISSION QUALIFICATION TRAINING								
HACX	400	1.5	C	3.0	X		X	1 ACFT (N)
	401	1.5	C	6.0	X	X	X	1 ACFT
	402	1.5	*	6.0	X	X	X	1 ACFT N
INSTRUCTOR TRAINING								
IUT	500	1.0						1 ACFT
	501	1.0						1 ACFT
	502	1.0						1 ACFT

Figure 13-1.--UH-1N (SAR) Pilot Refly Interval, Mission Readiness Percentage.

AIRCRAFT: UH-1N (SAR) MOS: 7563 CREW POSITION: PILOT

FLIGHT STAGE	TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
SPECIAL FLIGHT TRAINING								
EVAL ACFT(N)(S)	600	1.5	C				X	1
	601	1.5	C				X	1 ACFT (N)
FORM	610	1.5	C					2 ACFT
NVD	620	1.5	6		X			1 ACFT NS
	621	1.5	6		X			1 ACFT NS
	622	1.5	6		X			1 ACFT NS
	623	1.5	6		X			1 ACFT NS
	624	1.5	6		X	X	X	1 ACFT NS
	630	1.5	6		X			1 ACFT NS
	631	1.5	6		X			1 ACFT NS
	632	1.5	C		X	X	X	1 ACFT NS

Figure 13-1.--UH-1N (SAR) Pilot Refly Interval, Mission Readiness Percentage, Continued.

UH-1N (SAR) PILOT FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
FAM	200	
	201	200
INST	210	
NAV	220	
	221	220
SAR	230	
	231	230
	232	230,231
SARX	240	
CAL	300	
	301	300
SAR	310	220
	311	220
	312	310,311
	313	310,311,312
	314	310,311,312
	315	310,311,312,313,314
	316	310,311,312,314,316
	317	310,311,312,313,314,315,316
	318	310
	319	310,318
	320	310,318
	321	310,318,319,320
	322	220,310,311,312,314,318
	323	220,221,310,311,312,313,314,315,318,320,321,322
NAV	330	220
	331	220,221,330
HACX	400	220,310,311,312,314,318,322
	401	220,240,310,311,312,314,318,322,400
	402	220,221,240,310,311,312,313,314,315,318,320,322,323,400,401

Figure 13-2.--UH-1N (SAR) Pilot Flight Update Chaining.

CHAPTER 14

UH-1N (SAR) CREW CHIEF

FIGURE

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 14

UH-1N (SAR) CREW CHIEF

1400. PROGRAMS OF INSTRUCTION (POI) FOR BASIC (SAR) CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1	Rappel School	HC-16
2-3	Ground School	SOMS
4-15	UH-1N Search and Rescue Training	SOMS

1401. POI FOR CONVERSION AND REFRESHER (SAR) CREW CHIEF

WEEKS	COURSE/PHASE	ACTIVITY
1-2	Ground School	SOMS
3-12	Search and Rescue Training	SOMS

1402. POI FOR INSTRUCTOR TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1	Instructor Training	SOMS

1403. POI FOR SPECIAL MISSION TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
N/A	Annual Evaluation flight	SOMS
1	Formation flight	SOMS
1	Night Vision Goggle Operations	SOMS

1410. GROUND TRAINING COURSES OF INSTRUCTION. Appropriate NAMTRAGRUDET (if applicable).

NITELAB	MAWTS-1

1411. SQUADRON LEVEL TRAINING

Publications and Related Directives
Survival and First Aid
Communication Procedures
Aircrew Coordination/Responsibilities
Safety
Search and Rescue Equipment
Emergency Procedures
Local Course Rules
Night Operations Course

1420. FLIGHT TRAINING: BASIC (SAR) CREW CHIEF

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-	25.0
Familiarization	5	7.5	12.5
Navigation	4	5.0	10.0
Confined Area Landings	3	4.5	7.5
Instruments	1	1.5	5.0
Total	**13**	**18.5**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Navigation	6	7.0	5.0
Confined Area Landings	5	7.5	5.0
Total	**11**	**14.5**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search and Rescue Training	**18**	**19.0**	**20.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
SAR Crew Chief Check	**2**	**3.0**	**10.0**
Total for Basic (SAR) Crew Chief	**44**	**55.0**	**100.0**

1421. CONVERSION AND REFRESHER (SAR) CREW CHIEF

1. Mission Capable Training

STAGE	FLIGHTS	HOURS
Navigation	**4**	**5.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS
Navigation	6	7.0
Confined Area Landings	4	6.0
Total	**10**	**13.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS
Search and Rescue Training	**18**	**19.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR Crew Chief Check	**2**	**3.0**

Total for Conversion and Refresher Crew Chief	**34**	**40.0**

1422. INSTRUCTOR UNDER TRAINING (IUT)

STAGE	FLIGHTS	HOURS
Familiarization/Navigation/Instrument	1	1.5
Confined Area Landings/Search and Rescue	1	1.5
Total	**2**	**3.0**

1423. SPECIAL MISSION TRAINING

STAGE	FLIGHTS	HOURS
Annual Evaluation Flight	1	1.5
Formation Flight	1	1.5
Night Vision Devices	8	12.0
Total	**10**	**15.0**

1430. SIMULATOR TRAINING. Not applicable.

1440. FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. UH-1N Qualified. When assigned to a UH-1N (SAR) billet, a designated Crew Chief (MOS 6174) who holds a current UH-1N NATOPS qualification shall complete the refresher syllabus.

b. Prior UH-1N SAR Qualification. When assigned to a UH-1N (SAR) billet, a designated Crew Chief (MOS 6174) who previously held a UH-1N (SAR) qualification shall complete the refresher syllabus.

c. No Previous UH-1N Qualification. When assigned to a UH-1N (SAR) billet, designated Crew Chiefs (MOS 6172, 6173, 6175) shall complete the basic syllabus along with appropriate plane captain prerequisites.

d. Crew Positions. Certain flights require that the Crew Chief under instruction (CCUI) be in a designated position. Crew position will be indicated on the top line of each flight description; CCUI/ICC e.g., (CCUI will assume the Crew Chief position).

e. Progression. CCUI should complete all stages within each phase before progressing to the next phase.

f. Crew members **shall** fly events annotated with an "NS" with Night Vision Goggles, for the entire flight. Minimum crew includes a qualified Aerial Observer for all events annotated with an "NS". Crew members **may** fly events annotated with "(NS)" with the option of using NVG's.

2. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

1441. MISSION CAPABLE TRAINING

1. General

a. Prior to flight training, the CCUI shall complete the NATOPS open book examination.

b. A locally prepared reading list which shall include appropriate sections from the NATOPS manual, NWP 19, NWP 19-1, NWP 55-8-SAR, the unit SOP, and other locally pertinent publications will be completed prior to CCX-400/401.

2. Familiarization

a. Purpose. To become familiar with the responsibilities of a UH-1N (SAR) Crew Chief to include aircraft flight characteristics, limitations, aircraft systems, and proficiency in assisting the pilots in all aspects of flight.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (5 Flights, 7.5 Hours)

FAM-100 1.5 C 1 ACFT

Goal. To become familiar with the UH-1N.

Requirement

(1) Introduce. Preflight, postflight, start procedures, in-flight emergency procedures, look-out procedures, communication procedures, passenger briefing, and aircraft configuration.

(2) Brief/Discuss. Inflight emergency procedures, SAR area of responsibility, aircraft security, and local field course rules.

FAM-101 1.5 C 1 ACFT

Goal. To become familiar with the UH-1N.

Requirement

(1) Introduce. Crew chief duties to include zone briefs, lookout procedures, and takeoff & landing procedures.

(2) Review. Emergency procedures, aircraft limitations, passenger briefing, and flight characteristics.

(3) Brief/Discuss. In-flight emergency procedures.

FAM-102 1.5 C 1 ACFT

Goal. Become familiar with UH-1N emergency procedures.

Requirement

(1) Introduce. Simulated in-flight emergencies, i.e. autorotations, cut guns, and slide-ons.

(2) Review. All previous FAM work.

FAM-103 1.5 C 1 ACFT N

Goal. To become familiar with UH-1N night operations.

Requirement. Review FAM-101 at night.

FAM-104 1.5 C 1 ACFT N

Goal. To become familiar with the UH-1N emergency procedures at night.

Requirement. Review FAM-102 at night.

3. Navigation

a. Purpose. To become familiar with navigating principles/techniques and become proficient at navigating within the SAR local operating area.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (4 Flights, 5.0 hours)

NAV-110 1.5 C,R 1 ACFT

Goal. Become familiar with local operating area.

Requirement

(1) Introduce. Local hospitals, their landing zones/approach/ departure routes, major highways, and cities.

(2) Brief/Discuss. Map locations of hospitals, surrounding cities, local highways, and outlying communities.

NAV-111 1.5 C,R 1 ACFT

Goal. Become familiar with local confined area landing (CAL) sites.

Requirement

(1) Introduce. Navigation procedures to all local CAL sites to include recognition of major landmarks, ridgelines, canyons etc.

(2) Review. Emergency procedures.

NAV-112 1.0 C,R 1 ACFT N

Goal. Become familiar with the local area at night.

Requirement. Repeat NAV-110 at night.

NAV-113 1.0 C,R 1 ACFT N

Goal. Become familiar with the local confined area landing sites at night.

Requirement. Review NAV-111 at night.

4. Confined Area Landings (CAL)

a. Purpose. To become familiar with operating procedures and techniques within mountainous confined areas.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (3 Flights, 4.5 Hours)

CAL-120 1.5 C 1 ACFT

Goal. To become familiar with confined area landing procedures and mountainous terrain characteristics.

Requirement

(1) Introduce. Proper clearance techniques and lookout procedures during CAL's.

(2) Review. Local CAL site locations by landing in various confined areas.

(3) Brief/Discuss. Mountainous wind characteristics, settling with power, and power settling recognition.

CAL-121 1.5 C 1 ACFT

Goal. Become familiar with CAL procedures.

Requirement

(1) Demonstrate. One-skid and sloped landing procedures.

(2) Review. Normal CAL procedures and locations.

CAL-122 1.5 C 1 ACFT N

Goal. Become familiar with CAL operations at night.

Requirement

(1) Demonstrate. Basic CAL procedures to include zone briefs, approach/departure routes, and waveoff recognition.

(2) Brief/Discuss. HIGE and HOGE procedures and theory.

5. Instruments

a. Purpose. To become familiar with instrument flight and the use of special flight publications.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (1 Flight, 1.5 Hours)

INST-130 1.5 C (S) 1 ACFT (N)

Goal. To become familiar with IFR flight.

Requirement. Introduce the use of IFR/VFR supplements and other documents such as VFR sectionals. Also make several IFR approaches under IFR conditions when possible.

1442. MISSION READY TRAINING

1. Navigation

a. Purpose. To become proficient at advanced navigation technique and procedures within the SAR local & extended areas.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (6 Flights 7.0 Hours)

NAV-200 1.0 C,R 1 ACFT

Goal. Become proficient at navigating within the SAR local operating area.

Requirement

(1) Demonstrate. Effective navigation techniques to local hospitals, surrounding cities, local roads & highways, and outlying communities.

(2) Review. Aircraft limitations and emergency procedures.

(3) Brief/Discuss. Recognition of major landmarks and terrain features used extensively for navigation.

NAV-201 1.0 C,R 1 ACFT

Goal. Become proficient at navigating within the SAR local confined area landing sites.

Requirement

(1) Review

(a) Navigation procedures to all local CAL sites to include recognition of major landmarks, ridgelines, canyons, power lines, etc.

(b) Emergency procedures.

NAV-202 1.5 C,R 1 ACFT

Goal. To become proficient at navigating within the SAR local operating area.

Requirement. Demonstrate proficiency in navigating to all CAL sites and hospitals within the SAR local area.

NAV-203 1.5 C,R 1 ACFT

Goal. Become proficient at navigating within the SAR "extended" operating areas.

Requirement

(1) Introduce. Any extended areas of interest.

(2) Review. The use of the IFR/VFR supplements and maps.

(3) Brief/Discuss. Map locations of extended areas and discuss away from home operations.

NAV-204 1.0 C,R 1 ACFT N

Goal. To become proficient at navigating within the SAR local operating area at night.

Requirement. Repeat NAV-200 at night.

NAV-205 1.0 C,R 1 ACFT N

Goal. To become proficient at navigating within the SAR local confined area landing sites at night.

Requirement. Review NAV-201 during the hours of darkness.

2. Confined Area Landings (CAL)

a. Purpose. To become proficient at confined area landing procedures and techniques.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (5 Flights, 7.5 Hours)

CAL-210 1.5 C,R 1 ACFT

Goal. To become proficient at sloped and one-skid landing responsibilities.

Requirement

(1) Demonstrate. Proficiency during one-skid and slope landings.

(2) Brief/Discuss. Emergency procedures, aircraft limitations, and dynamic rollover characteristics.

CAL-211 1.5 C 1 ACFT

Goal. To become proficient at advanced CAL operations.

Requirement. Demonstrate familiarity with approach/departure routes, CAL sites, specific terrain features, obstacles, waveoffs, and zone briefings. Make landings to all CAL sites when possible.

CAL-212 1.5 C,R 1 ACFT

Goal. To become proficient at advanced CAL operations.

Requirement. Repeat CAL-211.

CAL-213 1.5 C,R 1 ACFT N

Goal. To become proficient at advanced CAL operations at night.

Requirement

(1) Repeat CAL-210 at night.

(2) Introduce the use of the SX-16 night sun search light for zone illumination and discuss it's limitations due to haze.

CAL-214 1.5 C,R 1 ACFT N

Goal. To become proficient at advanced CAL operations.

Requirement. Review CAL-211 at night.

1443. MISSION QUALIFICATION TRAINING

1. Search and Rescue (SAR)

a. Purpose. To develop proficiency in Search and Rescue techniques and procedures.

b. General. Due to local SAR demands the need for specific rescue techniques varies between SAR commands. The two recognized rescue procedures are shorthaul and stokes evolution. As used herein stokes evolution refers to the rappel of the corpsman/rescue aircrewman, egress of the stokes litter, and finally a hoist of either both stokes litter and corpsman, or both separately. Shorthaul herein refers to shorthauling RA, combined RA/Patient, or RA/stokes litter.

c. Ground Training. CCUI will undergo ground training to become familiar with rappelling techniques. This will include a brief of aircraft rigging, shorthaul, and stokes voice procedures. The CCUI will also attend a demonstration of all SAR equipment to be used during this phase of training.

d. Use of Live Victims. While conducting stokes evolutions during this phase of training, the use of "live" victims in the stokes litter is prohibited.

e. Crew Requirement. CCUI/ICC/RA.

f. Flight Training (18 Flights, 19.0 Hours)

SAR-300 1.O C,R 1 ACFT

Goal. To become familiar with conducting aircraft rappelling operations.

Requirement

(1) Demonstrate. ICC demo Rappel Master responsibilities and special safety precautions (Demo at least 4 Rappels).

(2) Brief/Discuss. Aircraft rigging procedures, equipment safety inspection requirements, lost communication procedures, and rappelling emergency procedures.

SAR-301 1.0 C,R 1 ACFT

Goal. To become proficient at Rappel Master techniques and safety responsibilities.

Requirement. Introduce Rappel Master responsibilities by performing 4 CAL site rappels.

SAR-302 1.0 C,R 1 ACFT

Goal. To become familiar with hoisting operations.

Requirement

(1) Introduce. Hoisting procedures. Conduct operations at 50 to 75 feet AGL in a simple environment. Practice Rappel Master techniques by conducting 2 rappels and use the hoist for each pick-up.

(2) Review. CAL site locations and local area navigation.

(3) Brief/Discuss. Rappelling safety procedures, voice procedures, hoist limitations, and emergency procedures while conducting hoist and rappel operations.

SAR-303 1.0 C,R 1 ACFT

Goal. Introduce stokes litter evolution.

Requirement

(1) Introduce. Stokes evolution in a simple environment stressing crew coordination and standardized voice procedures. Conduct a minimum of 5 evolutions. Rappels: 2 at 75', 1 at 100', 1 at 150', and 1 at 200'. Hoists as desired.

(2) Brief/Discuss. Stokes evolution safety precautions, emergency procedures, and ground communication procedures.

SAR-304 1.0 C,R 1 ACFT

Goal. Practice stokes evolution in moderately rough terrain.

Requirement

(1) Review. Stokes evolution in moderately rough terrain.

(2) Brief/Discuss. Jammed hoist, runaway hoist, hoist entanglement procedures, and the use of the quicksplice.

(3) Review. CAL techniques emphasizing one skid and slope landings.

SAR-305 1.0 C,R 1 ACFT

Goal. Refine stokes evolution in moderately rough terrain.

Requirement. Review SAR-304.

SAR-306 1.0 C,R 1 ACFT N

Goal. Introduce stokes evolution at night.

Requirement

(1) Review. SAR-303 at night.

(2) Introduce. The use of the SX-16 night sun searchlight for standoff lighting and pickup point illumination.

SAR-307 1.0 C,R 1 ACFT

Goal. Introduce shorthaul procedures.

Requirement

(1) Introduce. Shorthaul procedures in terrain free of obstacles, stressing crew coordination and standardized voice procedures. Conduct a minimum of 2 evolutions.

(2) Review. CAL site locations and local area navigation.

(3) Brief/Discuss. Single engine failure while performing hover work. Also discuss emergency rope cutting procedures.

SAR-308 1.0 C,R 1 ACFT N

Goal. Introduce stokes evolution in moderately rough terrain at night.

Requirement. Review SAR-304 at night.

SAR-309 1.0 C,R 1 ACFT

Goal. Introduce stokes evolution in rough terrain.

Requirement

(1) Review

(a) Stokes evolution in mountainous and very confined areas (including ravines and pinnacles where practical).

(b) One skid landings, slope landings, and minimum rotor clearances.

(2) Brief/Discuss. Mountain area flying and applicable local communications procedures.

SAR-310 1.0 C,R 1 ACFT N

Goal. Introduce stokes evolution in rough terrain at night.

Requirement. Review SAR-309 at night.

SAR-311 1.0 C,R 1 ACFT

Goal. Practice shorthaul procedures in rough terrain.

Requirement

(1) Review. Shorthaul procedures in rough terrain simulating realistic conditions. Perform a minimum of 2 evolutions. Conduct at least one evolution using cliff or vertical face techniques.

(2) Brief/Discuss. Shorthaul emergency procedures and other factors affecting shorthauls in rough terrain to include cliff or vertical face procedures.

SAR-312 1.0 C,R 1 ACFT

Goal. Practice stokes evolution in rough terrain.

Requirement

(1) Review

(a) Stokes evolution in mountainous and very confined areas. Conduct operations simulating realistic conditions while striving for rapid stokes deployment and minimal A/C movement over pickup point. Perform a minimum of 2 evolutions.

(b) Hoist emergency procedures, belay line control, minimum rotor clearances, and standardized voice procedures.

SAR-313 1.0 C,R 1 ACFT N

Goal. Practice shorthaul procedures in simple terrain at night.

Requirement. Review SAR-307 at night.

SAR-314 1.0 C,R 1 ACFT N

Goal. Practice stokes evolution in rough terrain at night.

Requirement. Review SAR-312 at night.

SAR-315 1.0 C,R 1 ACFT N

Goal. Practice shorthaul procedures in rough terrain at night.

Requirement. Review SAR-311 at night.

SAR-316 1.5 C,R 1 ACFT

Goal. Practice all SAR procedures during a simulated SAR scenario.

Requirement

(1) Brief/Execute. Simulated rescue mission involving 1 shorthaul and 1 stokes evolution in rough terrain. This mission
should include all facets of an actual mission from alert to patient delivery.

(2) Brief/Discuss. All emergency procedures and A/C limitations, air ambulance, and on-scene procedures.

SAR-317 1.5 C,R 1 ACFT N

Goal. Practice all SAR procedures during a simulated night SAR
scenario.

Requirement. Review SAR-315 at night.

1444. FULL-MISSION QUALIFICATION TRAINING

1. Combat Qualification Check

a. Purpose. To certify that the CCUI is capable of executing all missions required of a UH-1N (SAR) crew chief.

b. General. The CCUI shall complete the NATOPS closed book exam and be CPR qualified prior to CCX-400/401.

c. Crew Requirements. CCUI/ICC/RA.

d. Flight Training (2 Flights, 3.0 Hours)

CCX-400 1.5 C,R E 1 ACFT

Goal. Day evaluation flight.

Requirement. CCUI will demonstrate a thorough knowledge of the helicopter systems, emergency procedures, CAL's, MAL's, hoist and rappel operations, rescue procedures, and the ability to perform these events under varying emergency and meteorological conditions. This check will include a simulated mission.

CCX-401 1.5 C,R E 1 ACFT N

Goal. Night evaluation flight.

Requirement. Repeat CCX-400 during the hours of darkness.

1450. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Qualification. An IUT will be considered qualified to instruct all flights in a particular stage of training once he has completed the corresponding IUT flights.

b. Standardization. Techniques of instruction and standardization shall be stressed on all IUT stage flights.

c. Roles. The ICC will play the role of the CCUI and the IUT will instruct to the greatest extent possible on all IUT flights.

d. Crew Requirements. IUT/ICC (IUT/ICC/RA for CSAR-501).

e. Flight Training (2 Flights, 3.0 Hours)

IUT-500 1.5 1 ACFT

Goal. Qualify the IUT to instruct FAM/NAV/INST/CAL stage flights.

Requirement

(1) Review. All FAM/NAV/INST/CAL requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. In-flight emergency procedures, and standardization criterion.

IUT-501 1.5 1 ACFT

Goal. Qualify the IUT to instruct SAR stage flights.

Requirement

(1) Review. All SAR requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for all SAR flights with regards to all safety precautions and standardization criterion.

1451. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Annual Evaluation Flight

a. Purpose. To conduct annual NATOPS evaluations.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (1 Flight, 1.5 Hours)

EVAL-600 1.5 E 1 ACFT (N)

Goal. To conduct an annual NATOPS evaluation.

Requirement. Complete the NATOPS evaluation per the UH-1N NATOPS manual. This flight may be flown in conjunction with CCX-400/401.

2. Formation Flight

a. Purpose. To become familiar with crew functions and responsibilities during formation flight.

b. Crew Requirement. CCUI/ICC.

c. Flight Training (1 Flight, 1.5 Hours)

FORM-610 1.5 2 ACFT

Goal. Introduce formation flight procedures.

Requirement. Review hand and arm signals, lookout doctrine, and crew chief responsibilities associated with formation flight.

3. Night Vision Devices (NVD)(HLL)

a. Purpose. To provide the ability to safely utilize NVD's while conducting search operations during hours of darkness above .0022 lux. Aircrew Coordination shall be thoroughly briefed.

b. General. Review the MAWTS-1 NVD manual and the MAWTS-1 crew chief course ENLISTED AIRCREW NIGHT VISION TRAINING, prior to conducting NVD flights. The Instructor Crew Chief shall be a designated NSI. At the successful completion of this stage the CCUI will be NSSQ HLL.

c. Safety. Rappels, hoists, and shorthauls shall not be conducted while any crewmember is wearing NVD's.

d. Crew Requirements. ICC/CCUI

e. Flight Training (5 Flights, 7.5 Hours)

NVD-620 1.5 C 1 ACFT NS

Goal. Introduce NVD low work and the touch and go pattern

Requirement

(1) Introduce. Use and wear of NVD's

(2) Brief/Discuss. Use and limitations of NVD's, NVD battery failure, NVD tube failure, and aircraft emergencies while using NVD's.

Prerequisite. FAM-122

NVD-621 1.5 C,R 1 ACFT NS

Goal. Develop proficiency with NVD's

Requirement.

(1) Review. NVD-620

(2) Introduce.

(a) NVD navigation procedures.

(b) NVD CAL procedures.

(3) Brief/Discuss. Lookout and aircraft clearance.

Prerequisite. NVD-620

NVD-622 1.5 C 1 ACFT NS

Goal. Demonstrate proficiency with NVD's while conducting CAL operations and while assisting the pilot during navigation procedures.

Requirement

(1) Introduce. NVD MAL procedures.

(2) Review

(a) Lookout procedures required to assist the pilot when operation in a confined area. Stress safety procedures, aircraft clearance from obstacles, and terrain suitability while using NVD's.

(b) Use of check points, time distance checks, barrier features, prominent terrain features, and map preparation while using NVD's.

(4) Discuss. Slope, grade, and wind considerations while performing MAL's.

Prerequisite. NVD-621.

NVD-623 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's in an HLL environment.

Requirement

(1) Review

(a) Procedures to assist the pilot when operating in confined areas with NVD's.

(b) NVD MAL procedures and NVD emergency procedures.

(c) Navigation while using NVD's.

Prerequisite. NVD-622

NVD-624 1.5 C,R E 1 ACFT NS

Goal. Refine crew coordination during a night SAR mission in an HLL environment.

Requirement

(1) Demonstrate. Proficiency in the use of NVD's above .0022 lux.

(2) Review. Procedures for NVD navigation, map preparation, CAL's, MAL's, and NVD emergency procedures.

(3) Brief/Discuss. Crew coordination, comfort levels, situational awareness, and terrain suitability and obstacle clearance.

Prerequisite. NVD-623

4. Night Vision Devices (NVD)(LLL).

a. Purpose. To develop proficiency to conduct operations while using NVD's below .0022 lux.

b. General.

(1) CCUI shall be NSSQ HLL.

(2) Upon completion of this stage the CCUI will be NSSQ LLL.

C. Ground Training. Review the MAWTS-1 NVD Manual.

d. Crew requirement. NSI/CCUI.

e. Prerequisite. NVD-624.

f. Flight Training (3 Flight, 4.5 hours)

NVD-630 1.5 C 1 ACFT NS

Goal. Perform NVD low work and pattern work during low light level conditions.

Requirement

(1) Introduce. Basic low work and pattern work in LLL.

(2) Brief/Discuss. Use of NVD's during low light level conditions, to include battery failure and crew coordination.

NVD-631 1.5 C 1 ACFT NS

Goal. Develop proficiency in CAL's, MAL's, and navigation procedures while using NVD's during low light level conditions.

Requirement

(1) Introduce. CAL's and navigation flight while using NVD's during low light level conditions.

(2) Brief/Discuss. Comfort levels, map preparation, and crew coordination.

Prerequisite. NVD-630.

NVD-632 1.5 C,R E 1 ACFT NS

Goal. To demonstrate proficiency in the low light level environment.

Requirement

(1) Conduct. Simulated SAR mission under low light level conditions.

(2) Brief/Discuss. NVD navigation, map preparation, crew

coordination, and comfort level.

Prerequisite. NVD-631.

1460. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UH-1N (SAR) MOS: 6174 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION CAPABLE TRAINING								
FAM	100	1.5	*	2.5	X			1 ACFT
	101	1.5	*	2.5	X			1 ACFT
	102	1.5	*	2.5	X			1 ACFT
	103	1.5	*	2.5	X			1 ACFT N
	104	1.5	*	2.5	X			1 ACFT N
NAV	110	1.5	*	2.5	X	X		1 ACFT
	111	1.5	*	2.5	X	X		1 ACFT
	112	1.0	*	2.5	X	X		1 ACFT N
	113	1.0	*	2.5	X	X		1 ACFT N
CAL	120	1.5	*	2.5	X			1 ACFT
	121	1.5	*	2.5	X			1 ACFT
	122	1.5	*	2.5	X			1 ACFT N
INST	130	1.5	*	5.0	X			1 ACFT(N)(S)
MISSION READY TRAINING								
NAV	200	1.0	6	0.5	X	X		1 ACFT
	201	1.0	6	0.5	X	X		1 ACFT
	202	1.5	6	1.0	X	X		1 ACFT
	203	1.5	C	1.0	X	X		1 ACFT
	204	1.0	3	1.0	X	X		1 ACFT N
	205	1.0	3	1.0	X	X		1 ACFT N
CAL	210	1.5	6	1.0	X	X		1 ACFT
	211	1.5	3	1.0	X			1 ACFT
	212	1.5	3	1.0	X	X		1 ACFT
	213	1.5	6	1.0	X	X		1 ACFT N
	214	1.5	3	1.0	X	X		1 ACFT N
MISSION QUALIFICATION TRAINING								
SAR	300	1.0	C	0.5	X	X		1 ACFT
	301	1.0	C	0.5	X	X		1 ACFT
	302	1.0	C	0.5	X	X		1 ACFT
	303	1.0	C	0.5	X	X		1 ACFT
	304	1.0	6	0.5	X	X		1 ACFT
	305	1.0	6	0.5	X	X		1 ACFT
	306	1.0	C	1.0	X	X		1 ACFT N
	307	1.0	C	1.0	X	X		1 ACFT
	308	1.0	C	1.0	X	X		1 ACFT N
	309	1.0	C	1.0	X	X		1 ACFT
	310	1.0	C	1.0	X	X		1 ACFT N
	311	1.0	1	1.0	X	X		1 ACFT
	312	1.0	1	1.0	X	X		1 ACFT
	313	1.0	C	1.0	X	X		1 ACFT N
	314	1.0	1	1.0	X	X		1 ACFT N

Figure 14-1.--UH-1N (SAR) Crew Chief Refly Interval, Mission Readiness Percentages.

AIRCRAFT: UH-1N (SAR) MOS: 6174 CREW POSITION: CREW CHIEF

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
SAR	315	1.0	1	1.0	X	X		1 ACFT N
	316	1.5	3	1.0	X	X		1 ACFT
	317	1.5	3	1.0	X	X		1 ACFT N
FULL MISSION QUALIFICATION TRAINING								
CCX	400	1.5	C	7.5	X	X	X	1 ACFT
	401	1.5	*	7.5	X	X	X	1 ACFT N
INSTRUCTOR TRAINING								
IUT	500	1.5						
	501	1.5						
SPECIAL FLIGHT TRAINING								
EVAL	600	1.5	C				X	1 ACFT(N)
FORM	610	1.5	C					2 ACFT
NVG	620	2.0	6		X			1 ACFT NS
	621	2.0	6		X			1 ACFT NS
	622	2.0	6		X			1 ACFT NS
	623	2.0	6		X			1 ACFT NS
	624	1.5	6		X	X	X	1 ACFT NS
	630	1.5	6		X			1 ACFT NS
	631	1.5	6		X			1 ACFT NS
	632	1.5	C		X	X	X	1 ACFT NS

14-1.--UH-1N (SAR) Crew Chief Refly Interval, Mission Readiness Percentages, Continued.

CREW CHIEF FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
NAV	200	
	201	
	202	
	203	
	204	200,202
	205	201
CAL	210	201
	211	201,210
	212	201,210,211
	213	201,205,210
	214	201,205,210,211,212
SAR	300	200,201,202
	301	300
	302	200,201,202,300,301
	303	300,301,302
	304	300,301,302,303
	305	300,301,302,303,304
	306	300,301,302,303
	307	200,201,202
	308	300,301,302,303,306
	309	300,301,302,303,304,305
	310	201,202,205,300,301,302,303,304,306,308
	311	201,202,300,301,307
	312	201,202,205,300,301,302,303,304,306,308,310
	313	201,202,300,301,307
	314	301,302,303,304,306,308,310,312
	315	307,311,313
	316	201,202,210
	317	205,316
CCX	400	200,201,202,210,300,301,302,316
	401	200,201,205,300,301,315

Figure 14-2.--UH-1N (SAR) Crew Chief Flight Update Chaining.

CHAPTER 15

UH-1N (SAR) RESCUE AIRCREWMAN
[IN-FLIGHT MEDICAL TECHNICIAN (IFMT)]

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

CHAPTER 15

UH-1N (SAR) RESCUE AIRCREWMAN
[IN-FLIGHT MEDICAL TECHNICIAN (IFMT)]

1500. PROGRAMS OF INSTRUCTION FOR BASIC AND CONVERSION RESCUE AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1-5	Aircrew Candidate School	NATC
6	Rappelling School	HC-16
7-8	Ground School	SOMS
9-18	UH-1N Search and Rescue Training	SOMS

1501. POI FOR REFRESHER RESCUE AIRCREWMAN

WEEKS	COURSE/PHASE	ACTIVITY
1	Rappelling School	HC-16
2-3	Ground School	SOMS
4-9	UH-1N Search and Rescue Training	SOMS

1502. POI FOR INSTRUCTOR UNDER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1	Flight Training	SOMS

1503. POI FOR SPECIAL FLIGHTS

WEEKS	COURSE/PHASE	ACTIVITY
N/A	Annual Evaluation Flight	SOMS
1	Formation Flight	SOMS
1	Night Vision Device Operations	SOMS

1510. GROUND TRAINING COURSES OF INSTRUCTION

1. COURSE/PHASE	ACTIVITY
Naval Aircrew Candidate School	NATC
Naval Rappelling School	HC-16
Emergency Medical Technician 1A (EMT-1A) *	NRMC
I.V. Certification *	NRMC
CPR Certification *	NRMC
Advanced Cardiac Life Support (ACLS) *	NRMC
NITELAB	MAWTS-1

2. CURRENCY REQUIREMENTS. Courses identified with an asterisk (*) have currency limits and must be renewed per current directives. ACLS training is recommended only if available.

1511. SQUADRON LEVEL TRAINING

Aircraft Systems

Aircrew Safety and Emergency Procedures
Preflight Rigging and Maintenance of Medical/Rescue Gear
Paramedic/Local EMS and SAR Responsibilities
Rescue Reports
Aircrew Coordination and Responsibilities
Cockpit Orientation Including Instrument and Radio Operation
Use of Navigational Publications and Charts
NATOPS Flight Manual and Checklist Usage
Open and Closed Book NATOPS Examinations
Night Operations Course

1520. FLIGHT TRAINING: BASIC AND CONVERSION RESCUE AIRCREWMAN

1. Mission Capable Training

STAGE	FLIGHTS	HOURS	PERCENT
Basic Qualification (Aircrew and Rappelling Schools)	-	-	45.0
Familiarization	5	5.0	15.0
Total	**5**	**5.0**	**60.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS	PERCENT
Navigation	3	4.0	3.0
Confined Area Landing	5	7.5	5.0
Search and Rescue	2	3.0	2.0
Total	**10**	**14.5**	**10.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
Search and Rescue	**15**	**22.5**	**15.0**

4. Full-Mission Qualification Training

STAGE	FLIGHTS	HOURS	PERCENT
SAR Rescue Aircrewman Check	**2**	**3.0**	**15.0**
Total for Basic and Conversion Rescue Aircrewman	**32**	**45.0**	**100.0**

1521. REFRESHER RESCUE AIRCREWMAN

1. Mission Capable Training

STAGE	FLIGHTS	HOURS
Familiarization	**2**	**2.0**

2. Mission Ready Training

STAGE	FLIGHTS	HOURS
Navigation	2	3.0
Confined Area Landing	4	6.0
Search and Rescue	2	3.0
Total	**8**	**12.0**

3. Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR Operations	**10**	**15.0**

4. Full Mission Qualification Training

STAGE	FLIGHTS	HOURS
SAR Check	**2**	**3.0**
Total for Refresher Aircrewman	**22**	**32.0**

1522. INSTRUCTOR UNDER TRAINING (IUT)

STAGE	FLIGHTS	HOURS
Familiarization/Navigation	1	1.5
Confined Area Landing/SAR	1	1.5
Total	**2**	**3.0**

1523. SPECIAL FLIGHT TRAINING

STAGE	FLIGHTS	HOURS
Annual Evaluation Flight	1	1.5
Formation Flight	1	1.5
Night Vision Devices	8	12.0
Total	**10**	**15.0**

1530. SIMULATOR TRAINING. Not applicable.

1540. FLIGHT PERFORMANCE REQUIREMENTS

1. General

a. Not Currently UH-1N (SAR) Qualified. When assigned to a UH-1N (SAR) billet, a crewman who is not currently UH-1N (SAR) qualified shall complete the Basic/Conversion POI. Corpsmen are normally assigned as UH-1N (SAR) rescue aircrewmen.

b. Prior UH-1N (SAR) Qualification. When assigned to a UH-1N (SAR) billet, a crewman who was previously UH-1N (SAR) qualified shall complete the Refresher POI.

c. Terms. When used in this chapter RAI refers to the Rescue Aircrewman Instructor, RAUI refers to the Rescue Aircrewman Under Instruction, and RA refers to a qualified Rescue Aircrewman. If the RA is a Navy corpsman, he is also considered an In-Flight Medical Technician (IFMT).

d. Progression. RAUI should complete all stages within each phase before progressing to the next phase.

e. Crew members **shall** fly events annotated with an "NS" with Night Vision Goggles, for the entire flight. Minimum crew includes a qualified Aerial Observer for all events annotated with an "NS". Crew members **may** fly events annotated with "(NS)" with the option of using NVG's.

2. Designation. Upon successful completion of the appropriate POI, and a minimum of 50 UH-1N (SAR) flight hours a crewman under instruction will become eligible for rescue aircrewman designation. Designation will be per OPNAVINST 3710.7 and the UH-1N NATOPS Flight Manual.

3. Crew Requirement/Position Indicators. An RAI is required for each flight in the POI. The RAUI will occupy the RA position except when the RAI is demonstrating a maneuver. A SAR crew chief is required for all CAL, SAR and EVAL flights.

4. Aircrew Coordination. Aircrew coordination shall be briefed for all flights and/or events.

1541. MISSION CAPABLE TRAINING

1. General

a. Prior to flight training the RAUI shall complete a NATOPS open book examination.

b. A locally prepared reading list which shall include appropriate sections from the NATOPS manual, NWP-19, NWP 19-1, NWP 55-8-SAR, the unit SOP, and other locally pertinent publications shall be completed prior to RAX-400.

2. Familiarization

a. Purpose. To become familiar with basic flight characteristics, limitations and emergency procedures. To develop proficiency in assisting pilots and crew chiefs in all aspects of flight.

b. General. Prior to flight training, orient the RAUI to the UH-1N cabin and cockpit (including instruments and radios).

c. Flight Training (5 flights, 5.0 Hours)

FAM-100 1.0 C 1 ACFT

Goal. Introduce normal operating procedures for the UH-1N.

Requirement

(1) Introduce. Preflight, postflight, start procedures, engine fire emergencies, in-flight emergency procedures, and lookout procedures. Conduct an egress drill.

(2) Brief/Discuss. Passenger briefing and aircraft configuration, inflight emergency procedures, the local SAR area of responsibility, aircraft security, and local course rules.

FAM-101 1.0 C 1 ACFT

Goal. To increase familiarity with the UH-1N.

Requirement

(1) Introduce. Rescue aircrewman duties to include zone briefs, lookout procedures, radio communication procedures, and takeoff/landing procedures.

(2) Review. Start up procedures, emergency procedures, aircraft limitations, passenger briefing, and flight characteristics.

(3) Brief/Discuss. In-flight emergency procedures.

FAM-102 1.0 C 1 ACFT

Goal. To increase familiarity with the UH-1N.

Requirement

(1) Review

(a) Simulated in-flight emergencies and normal in-flight rescue aircrewman responsibilities.

(b) Proper lookout procedures and proper takeoff and landing procedures.

(2) Fly in the copilot's seat when practical.

(3) Brief/Discuss. Specific rescue aircrewman functions, emergency procedures, radio, and observation procedures. Emphasize NATOPS Qualified Observer duties.

FAM-103 1.0 C,R 1 ACFT

Goal. Become familiar with UH-1N emergency procedures.

Requirement

(1) Introduce. Autorotations, cut guns, single and dual engine failures, and hydraulic malfunctions.

(2) Review. All previous FAM work.

FAM-104 1.0 C,R 1 ACFT N

Goal. Become familiar with UH-1N night operations.

Requirement. Review FAM-102 and FAM-103 at night.

1542. MISSION READY TRAINING

1. General. The RAUI shall complete the Naval Rappelling Course before conducting any rappelling operations during this stage of training.

2. Navigation

a. Purpose. To introduce basic navigation principles during day and night operations.

b. Flight Training (3 Flights, 4.0 Hours)

NAV-200 1.0 C 1 ACFT

Goal. Introduce local navigation skills.

Requirement

(1) Introduce. Local hospitals, major highways/roads, landmarks, and the local SAR operating area.

(2) Brief/Discuss. Maps, charts, and publications applicable to navigation in the local area.

NAV-201 1.5 C,R 1 ACFT

Goal. Practice local navigation skills.

Requirement

(1) Introduce. Local CAL sites.

(2) Review. Navigating to local hospitals, major highways/ roads, landmarks, and throughout the local SAR operating area. Emphasize the use of local geographical and manmade navigation aids.

NAV-202 1.5 C,R 1 ACFT N

Goal. Introduce navigation in the local area at night.

Requirement. Review NAV-201 at night.

3. Confined Area Landings (CAL)

a. Purpose. Introduce procedures required to operate from a confined landing area during day and night operations.

b. Flight Training (5 Flights, 7.5 Hours)

CAL-210 1.5 C 1 ACFT

Goal. Introduce CAL operations.

Requirement

(1) Introduce. CAL operations. Emphasize landing zone briefs, waveoff instructions, obstacles (in/approaching the zone), determination of wind direction, and touchdown clearance (approach/departure).

(2) Brief/Discuss. Emergency procedures, aircraft limitations, and dynamic rollover characteristics.

CAL 211 1.5 C,R 1 ACFT

Goal. Increase proficiency in CAL operations.

Requirement

(1) Introduce. Slope and one skid landings.

(2) Review. CAL-210.

CAL-212 1.5 C,R 1 ACFT N

Goal. Introduce night CAL operations.

Requirement. Review CAL-211 at night emphasizing depth perception and masking of terrain and obstacles.

Prerequisite: NAV-202.

CAL-213 1.5 C,R 1 ACFT

Goal. Practice advanced CAL operations.

Requirement

(1) Review. CAL-211. Emphasize mountainous techniques including the use of unprepared landing sites where available.

(2) Brief/Discuss. Mountainous techniques, procedures, and effects of high density altitude.

CAL-214 1.5 C,R 1 ACFT N

Goal. Practice advanced CAL operations at night.

Requirement. Review CAL-213 at night.

4. Search and Rescue

a. Purpose. To introduce basic rappel master techniques.

b. Flight Training (2 Flights, 3.0 Hours)

SAR-220 1.5 C,R 1 ACFT

Goal. To become familiar with conducting aircraft rappelling operations.

Requirement

(1) Demonstrate. ICC demo rappel master responsibilities and special safety precautions (demo at least 4 rappels).

(2) Brief/Discuss. Aircraft rigging procedures, equipment safety inspection requirements, lost communication procedures, and rappelling emergency procedures.

SAR-221 1.5 C,R 1 ACFT

Goal. To become proficient at rappel master techniques and safety responsibilities.

Requirement. Refine rappel master techniques by performing 4 CAL site rappels.

1543. MISSION QUALIFICATION TRAINING

1. General

a. The RAUI shall be currently certified for EMT, IV and CPR before designation as an RAC.

b. The RAUI shall complete the Naval Rappelling Course before conducting any rappelling operations during this stage of training.

c. Before conducting rappel operations from aircraft, RAUI will perform a minimum of 5 tower rappels.

d. Due to local SAR demands the need for specific rescue techniques varies between SAR commands. The two recognized rescue procedures are short haul and stokes evolution. As used herein stokes evolution refers to the rappel of the corpsman/rescue aircrewman, egress of the stokes litter, and finally a hoist of either both stokes litter and corpsman, or both separately. Short haul herein refers to shorthauling either RA, combined RA/Patient, or RA/Stokes litter.

2. Search and Rescue

a. Purpose. Develop proficiency in search and rescue techniques.

b. Flight Training (15 Flights, 22.5 Hours)

SAR-300 1.5 C,R 1 ACFT

Goal. Introduce rappel and hoist operations.

Requirement

(1) Introduce. Rigging the aircraft for rappelling and hoisting. Execute a minimum of 5 rappels and 5 hoists at various altitudes. Rappels: 2 at 75', 1 at 100', 1 at 150', and 1 at 200'. Hoists as desired.

(2) Brief/Discuss. Hand signals and rappelling/hoisting emergencies.

SAR-301 1.5 C 1 ACFT N

Goal. Introduce rappel and hoist operations at night.

Requirement. Review SAR-300 at night.

SAR-302 1.5 C 1 ACFT

Goal. Introduce rappel and hoist operations in conjunction with a weighted stokes litter.

Requirement

(1) Conduct. Minimum of 2 stokes evolutions in an area free of obstacles.

(2) Review. NAV-201.

(3) Brief/Discuss. Proper rigging, applicable rappel & hoist emergencies, and hand signals.

SAR-303 1.5 C,R 1 ACFT

Goal. Practice rappel and hoist operations in conjunction with a weighted stokes litter.

Requirement

(1) Conduct. Minimum of 2 stokes evolutions in moderately rough terrain.

(2) Review. CAL-213.

SAR-304 1.5 C 1 ACFT N

Goal. Introduce rappel and hoist operations in conjunction with a weighted stokes litter at night.

Requirement. Review SAR-302 at night and NAV-202.

SAR-305 1.5 C,R 1 ACFT N

Goal. Practice rappel and hoist operations in conjunction with a weighted stokes litter at night.

Requirement. Review SAR-303 at night and CAL-214.

SAR-306 1.5 C,R 1 ACFT

Goal. Introduce short haul operations.

Requirement

(1) Conduct. Minimum of four, 50-100 meter short haul evolutions in an area free of obstacles.

(2) Brief/Discuss. Proper rigging, applicable hand signals, and emergency procedures for short hauls.

SAR-307 1.5 C,R 1 ACFT N

Goal. Introduce short haul operations at night.

Requirement. Review SAR-306 at night.

SAR-308 1.5 C,R 1 ACFT

Goal. Introduce rugged terrain short haul operations.

Requirement

(1) Conduct. Minimum of three, 100 meter short haul evolutions in rugged terrain. Conduct at least one evolution using cliff or vertical face technique.

(2) Brief/Discuss. Proper rigging, applicable hand signals, and emergency procedures for short hauls for cliffs or vertical face.

SAR-309 1.5 C,R 1 ACFT N

Goal. Introduce rugged terrain short haul operations at night.

Requirement. Review SAR-308 at night.

SAR-310 1.5 C,R 1 ACFT

Goal. Practice rappel and hoist operations.

Requirement

(1) Conduct. Minimum of two stokes evolutions in rough terrain.

(2) Brief/Discuss. Search patterns and scanning techniques.

SAR-311 1.5 C 1 ACFT N

Goal. Practice rappel and hoist operations at night.

Requirement. Review SAR-310 at night.

SAR-312 1.5 C 1 ACFT N

Goal. Refine rappel and hoist operations.

Requirement

(1) Conduct. Minimum of two stokes evolutions in rugged terrain during the hours of darkness.

(2) Brief/Discuss. Search patterns and scanning techniques at night.

SAR-313 1.5 C,R 1 ACFT

Goal. Review all SAR procedures during a simulated search and rescue scenario.

Requirement. Using a simple mission scenario, execute all facets of a simulated rescue mission. Scenario should include communication, navigation to the rescue area, and return to a major hospital.

SAR-314 1.5 C,R 1 ACFT N

Goal. Review all SAR procedures during a simulated search and rescue at night.

Requirement. Review SAR-313 at night.

1544. FULL MISSION QUALIFICATION TRAINING

1. Rescue Aircrewman Checkride (RAX).

a. Purpose. To evaluate proficiency in all operations required of a UH-1N (SAR) Rescue Aircrewman.

b. General. The RAUI shall complete the NATOPS closed book examination prior to RAX-400/401.

c. Flight Training (2 Flights, 3.0 Hours)

RAX-400 1.5 C,R E 1 ACFT

Goal. Evaluation flight.

Requirement. During a search and rescue scenario(s) the RAUI must demonstrate a thorough knowledge of aircraft systems, capabilities, limitations, and emergency procedures. He must demonstrate a working knowledge of the National SAR System and a thorough knowledge of the local SAR SOP. He must demonstrate proper rigging, equipment inspection, hoisting and rappelling, short haul, and rescue procedures. The ability to perform emergency medicine under varying emergency, meteorological, and terrain conditions must be clearly shown.

RAX-401 1.5 C,R E 1 ACFT N

Goal. Night evaluation flight.

Requirement. Review RAX-400 at night.

1550. IUT FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. General

a. Qualification. An IUT will be considered qualified to instruct all flights in a particular stage of training upon completion of the corresponding IUT flights.

b. Standardization. Techniques of instruction and standardization shall be stressed on all IUT flights.

c. Roles. The RAI will play the role of RAUI and the IUT will instruct to the greatest extent possible on all IUT flights.

d. Flight Training (2 Flights, 3.0 Hours)

IUT-500 1.5 1 ACFT

Goal. Qualify the IUT to instruct FAM, NAV, and CAL stage flights.

Requirement

(1) Review. All FAM, NAV, and CAL requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. In-flight emergency procedures.

IUT-501 1.5 1 ACFT

Goal. Qualify the IUT to instruct SAR stage flights.

Requirement

(1) Review. All SAR requirements with emphasis on appropriate safety margins.

(2) Brief/Discuss. Procedures for SAR flights with regard to all safety precautions.

1551. SPECIAL FLIGHT/SIMULATOR PERFORMANCE REQUIREMENTS

1. Annual Evaluation Flights

a. Purpose. To conduct an annual NATOPS evaluation.

b. Flight Training (1 Flight, 1.5 Hours)

EVAL-600 1.5 E 1 ACFT (N)

Goal. Conduct an annual NATOPS evaluation.

Requirement. Complete the NATOPS evaluation per the UH-1N NATOPS manual. This flight may be flown in conjunction with RAX-400/401.

2. Formation Flight

a. Purpose. To become familiar with crew functions and responsibilities required during formation flight.

b. Flight Training (1 Flight, 1.5 Hours)

FORM-610 1.5 2 ACFT

Goal. Introduce formation flight procedures.

Requirement. Introduce hand and arm signals, lookout procedures, and rescue aircrewman responsibilities associated with formation flight.

3. Night Vision Devices (NVD)(HLL)

a. Purpose. To provide the ability to safely utilize NVD's while conducting search operations during hours of darkness above .0022 lux. Aircrew Coordination shall be thoroughly briefed.

b. General. Review the MAWTS-1 NVD manual and the MAWTS-1 crew chief course ENLISTED AIRCREW NIGHT VISION TRAINING, prior to conducting NVD flights. The Instructor Crew Chief shall be a designated NSI. At the successful completion of this stage the AOUI will be NSSQ HLL.

c. Safety

(1) Rappels, hoists, and shorthauls shall not be conducted while any crew member is wearing NVD's.

(2) Refer to MCO P3500.14, Chapter 9 for NVD policies.

d. Crew Requirements. ICC/AOUI

e. Flight Training (5 Flights, 7.5 Hours)

NVD-620 1.5 C 1 ACFT NS

Goal. Introduce NVD low work and the touch and go pattern

Requirement

(1) Introduce. Use and wear of NVD's

(2) Brief/Discuss. Use and limitations of NVD's, NVD battery failure, NVD tube failure, and aircraft emergencies while using NVD's.

Prerequisite. FAM-122

NVD-621 1.5 C,R 1 ACFT NS

Goal. Develop proficiency with NVD's

Requirement

(1) Introduce

(a) NVD navigation procedures.

(b) NVD CAL procedures.

(2) Brief/Discuss. Lookout and aircraft clearance.

(3) Review. NVD-620

Prerequisite. NVD-620

NVD-622 1.5 C 1 ACFT NS

Goal. Demonstrate proficiency with NVD's while conducting CAL operations and while assisting the pilot during navigation procedures.

Requirement

(1) Introduce. NVD MAL procedures.

(2) Review

(a) Lookout procedures required to assist the pilot when operation in a confined area. Stress safety procedures, aircraft clearance from obstacles, and terrain suitability while using NVD's.

(b) Use of check points, time distance checks, barrier features, prominent terrain features, and map preparation while using NVD's.

(3) Discuss. Slope, grade, and wind considerations while performing MAL's.

Prerequisite. NVD-621

NVD-623 1.5 C 1 ACFT NS

Goal. Develop proficiency with NVD's in a HLL environment.

Requirement

(1) Review

(a) Procedures to assist the pilot when operating in confined areas with NVD's.

(b) Navigation while using NVD's.

(c) NVD MAL procedures and NVD emergency procedures.

Prerequisite. NVD-622

NVD-624 1.5 C,R E 1 ACFT NS

Goal. Refine crew coordination during a night SAR mission in an HLL environment.

Requirement

(1) Demonstrate. Proficiency in the use of NVD's above .0022 lux.

(2) Review. Procedures for NVD navigation, map preparation, CAL's, MAL's, and NVD emergency procedures.

(3) Brief/Discuss. Crew coordination, comfort levels, situational awareness, and terrain suitability and obstacle clearance.

Prerequisite. NVD-623

4. Night Vision Devices (NVD)(LLL).

a. Purpose. To develop proficiency to conduct operations while using NVD's below .0022 lux.

b. General

(1) AOUI shall be NSSQ HLL.

(2) Upon completion of this stage the AOUI will be NSSQ LLL.

C. Ground Training. Review the MAWTS-1 NVD Manual.

d. Crew requirement. ICC/AOUI.

e. Prerequisite. NVD-624

f. Flight Training (3 Flights, 4.5 hours).

NVD-630 1.5 C 1 ACFT NS

Goal. Perform NVD low work and pattern work during low light level conditions.

Requirement

(1) Introduce. Basic low work and pattern work in the LLL.

(2) Brief/Discuss. Use of NVD's during low light level conditions, to include battery failure and crew coordination.

NVD-631 1.5 C 1 ACFT NS

Goal. Develop proficiency in CAL's, MAL's, and navigation procedures while using NVD's during low light level conditions.

Requirement

(1) Conduct. CAL's and navigation flight while using NVD's during low light level conditions.

(2) Brief/Discuss. Comfort levels, map preparation, and crew coordination.

Prerequisite. NVD-630

NVD-632 1.5 C,R E 1 ACFT NS

Goal. To demonstrate proficiency in the low light level environment.

Requirement. Conduct a simulated SAR mission under low light level conditions.

1560. ORDNANCE REQUIREMENTS. Not applicable.

AIRCRAFT: UH-1N (SAR) MOS: XXXX CREW POSITION: RESCUE AIRCREWMAN/IFMT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
MISSION CAPABLE TRAINING								
FAM	100	1.0	*	3.0	X			1 ACFT
	101	1.0	*	3.0	X			1 ACFT
	102	1.0	*	3.0	X			1 ACFT
	103	1.0	*	3.0	X	X		1 ACFT
	104	1.0	*	3.0	X	X		1 ACFT N
MISSION READY TRAINING								
NAV	200	1.0	C	1.0	X			1 ACFT
	201	1.5	6	1.0	X	X		1 ACFT
	202	1.5	6	1.0	X	X		1 ACFT N
CAL	210	1.5	C	1.0	X			1 ACFT
	211	1.5	6	1.0	X	X		1 ACFT
	212	1.5	6	1.0	X	X		1 ACFT N
	213	1.5	6	1.0	X	X		1 ACFT
	214	1.5	6	1.0	X	X		1 ACFT N
SAR	220	1.5	6	1.0	X	X		1 ACFT
	221	1.5	6	1.0	X	X		1 ACFT
MISSION QUALIFICATION TRAINING								
SAR	300	1.5	C	1.0	X	X		1 ACFT
	301	1.5	1	1.0	X			1 ACFT N
	302	1.5	C	1.0	X			1 ACFT
	303	1.5	6	1.0	X	X		1 ACFT
	304	1.5	6	1.0	X			1 ACFT N
	305	1.5	6	1.0	X	X		1 ACFT N
	306	1.5	3	1.0	X	X		1 ACFT
	307	1.5	3	1.0	X	X		1 ACFT N
	308	1.5	1	1.0	X	X		1 ACFT
	309	1.5	6	1.0	X	X		1 ACFT N
	310	1.5	C	1.0	X	X		1 ACFT
	311	1.5	1	1.0	X			1 ACFT N
	312	1.5	1	1.0	X			1 ACFT N
	313	1.5	3	1.0	X	X		1 ACFT
	314	1.5	3	1.0	X	X		1 ACFT N
FULL-MISSION QUALIFICATION TRAINING								
RAX	400	1.5	C	7.5	X	X	X	1 ACFT
	401	1.5	C	7.5	X	X	X	1 ACFT N
INSTRUCTOR TRAINING								
IUT	500	1.5						1 ACFT
	501	1.5						1 ACFT

Figure 15-1.--UH-1N (SAR) Rescue Aircrewman Refly Interval, Mission Readiness Percentages.

AIRCRAFT: UH-1N (SAR) MOS: XXXX CREW POSITION: RESCUE_____
AIRCREWMAN/IFMT

STAGE	FLIGHT TRAINING CODE	HRS	REFLY INTERVAL	MRP	C	R	E	REMARKS
SPECIAL FLIGHT TRAINING								
EVAL	600	1.5	C				X	1 ACFT (N)
FORM	610	1.5	C					2 ACFT
NVD	620	1.5	6		X			1 ACFT NS
	621	1.5	6		X			1 ACFT NS
	622	1.5	6		X			1 ACFT NS
	623	1.5	6		X			1 ACFT NS
	624	1.5	6		X	X	X	1 ACFT NS
	630	1.5	6		X			1 ACFT NS
	631	1.5	6		X			1 ACFT NS
	632	1.5	C		X	X	X	1 ACFT NS

Figure 15-1.--UH-1N (SAR) Rescue Aircrewman Refly Interval, Mission Readiness Percentages, Continued.

RESCUE AIRCREWMAN FLIGHT UPDATE CHAINING

STAGE	FLIGHT	FLIGHTS UPDATED
NAV	200	
	201	200
	202	200,201
CAL	210	
	211	210
	212	210,211
	213	210,211
	214	210,211,212,213
SAR	220	
	221	220
SAR	300	
	301	300
	302	200,201,300
	303	210,212,213,300,302
	304	200,201,202,300,301,302
	305	210,211,214,300,301,302
	306	300
	307	300,301,306
	308	300,306
	309	300,301,306,308
	310	300.302,303
	311	300,301,302,303,304,305,310
	312	300,301,302,303,304,305,310,311
	313	200,201,210,300,302,303,306,308,310
	314	200,201,202,210,211,214,300,301,302,303,304,305,306,307, 308,309,310,311,312,313,
RAX	400	200,201,210,211,213,220,221,300,302,303,306,308,310,313
	401	201,202,211,214,220,221,301,304,305,307,309,311,312,314

Figure 15-2.--UH-1N (SAR) Rescue Aircrewman Flight Update Chaining.

CHAPTER 16

F-5 PILOT

*** * N O T E * ***

Aircrew coordination will be briefed for all flights and aircrew positions.

1600. PROGRAMS OF INSTRUCTION

1601. CONVERSION PILOT. All pilots shall have a tactical jet background. Air Combat Tactics Instructor designation is required.

Weeks	Course	Activity
1-2	Ground School, Mission Capable Training	VMFT-401/VFC-13
3-5	Mission Ready Training	VMFT-401
6-12	Mission Qualification Training	VMFT-401
12-16	Full-Mission Qualification Training	VMFT-401

1602. REFRESHER PILOT. Greater than 12 months since last F-5 flight.

WEEKS	COURSE	ACTIVITY
1-2	Ground School, Mission Capable Refresher Training	VMFT-401
3-4	Mission Ready Training	VMFT-401

1603. INSTRUCTOR UNDER TRAINING (IUT)

WEEKS	COURSE	ACTIVITY
1	Instructor Under Training	VMFT-401

1610. GROUND TRAINING.

1611. COURSES OF INSTRUCTION

COURSE	ACTIVITY
F-5 Aircraft System	USAF/VMFT-401
Adversary Pilot Syllabus	MAWTS-1/VMFT-401
Threat Weapons	MAWTS-1/VMFT-401
Threat Tactics	MAWTS-1/VMFT-401
Fighter Performance	MAWTS-1/VMFT-401
Helicopter Performance/Tactics	MAWTS-1/VMFT-401
Low Altitude Tactics Syllabus	MAWTS-1/VMFT-401

1612. SIMULATOR TRAINING. No F-5 flight simulator is avaiable at MCAS Yuma. Cockpit procedures trainer, if available, will be utilized prior to the first flight of mission capable training.

1613. SQUARDON LEVEL TRAINING. Training will include, but not be limited to, an adversary and LAT training syllabus conducted by VMFT-401 and MAWTS-1.

1620. FLIGHT TRAINING. The Conversion, Refresher, and Instructor courses of instruction are contained herein. Due to the nature of the adversary support mission, all F-5 pilots will have a 7523 MOS and ACTI designation. VMFT-401 does not possess the facilities nor equipment to conduct Basic or Transiton training. Figure 16-1 provides refly interval and mission readiness percentage.

1. Conversion Pilot

a. Mission Capable Training

Stage	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	25.5
Familiarization	7	5.6	24.5
Instruments	1	1.0	3.5
Air Intercept	2	2.4	7.0
	10	9.0	60.0

b. Mission Ready Training

Stage	FLIGHTS	HOURS	PERCENT
Instruments	1	1.0	0.5
Air-To-Air	11	8.8	6.0
Air Intercept	2	2.0	1.0
Navigation	1	0.8	0.5
Low Altitude Tactics	4	3.2	2.0
	19	15.8	10.0

c. Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	7	5.6	8.0
Surface Attack	1	0.8	1.0
Helicopter Attack	3	2.4	4.0
Strike Intercept	2	1.6	2.0
	13	10.4	15.0

d. Full-Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	6	4.8	10.0
Helicopter Attack	1	0.8	1.0
Anti-Air Warfare	2	1.6	3.0
	9	7.2	15.0
Total	51	42.4	100.0

2. Refresher Pilot

a. Mission Capable Training

Stage	FLIGHTS	HOURS	PERCENT
Basic Qualification	-	-.-	46.0
Fimiliarization	3	2.4	10.5
Instruments	1	1.0	3.5
	4	3.5	60.0

b. Mission Ready Training

Stage	FLIGHTS	HOURS	PERCENT
Instruments	1	1.0	0.5
Air-To-Air	11	8.8	6.0
Air Intercept	2	2.0	1.0
Navigation	1	0.8	0.5
Low Altitude Tactics	4	3.2	2.0
	19	15.8	10.0

c. Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	7	5.6	8.0
Surface Attack	1	0.8	1.0
Helicopter Attack	3	2.4	4.0
Strike Intercept	2	1.6	2.0
	13	10.4	15.0

d. Full-Mission Qualification Training

Stage	FLIGHTS	HOURS	PERCENT
Air-To-Air	6	4.8	10.0
Helicopter Attack	1	0.8	2.0
Anti-Air Warfare	2	1.6	3.0
	9	7.2	15.0
Total	45	36.8	100.0

1641. MISSION CAPABLE TRAINING

1. Familiarization

a. Purpose. To develop proficiency and familiarity with aircraft flight characteristics, limitations, emergency procedures, and maneuvering envelope including all authorized aerobatics.

b. General.

(1) All flights in familiariztion stage with the exception of INST 110, shall be flown during daylight hours.

(2) All FAM flights shall be led by designated F-5 FAM instructor or may be flown in a F-5F.

(3) Prior to commencing syllabus training, pilots shall:

(a) Complete F-5 ground school.

(b) Successfully complete the open closed book F-5 NATOPS examinations.

(c) Review the F-5 departure/spin video tape.

(d) Receive the F-5 Northrop seat brief to include aeromedical aspects.

(e) Be qualified and current for flight in naval aircraft.

(f) If no F-5F is available FAM 104 will be the last flight flown in the mission capable stage.

c. Flight Training (7 Flights, 5.6 Hours)

FAM-99 NO FLIGHT 1 F-5F/1 F-5E

Goal. To introduce F-5 ground operations and preflight

Requirement. Demonstrate aircraft preflight inspection, cockpit and parachute preflight inspection, start and line procedures.

FAM-100 0.8 1 F-5F

Goal. To introduce F-5 flight characteristics, maneuvers and landing pattern.

Requirement. Perform A/B takeoff, aerobatics to include: Aileron roll, wing over, barrel roll, loop(450 to 500), Immelann, split S. Introduce inverted pitch hang-up recovery, pushover, clean and dirty stall recovery, accelerated stall recovery, airborne shutdown and air start, emergency landing gear release, field entry, and full flap landings.

FAM-101 0.8 1 F-5F

Goal. To introduce F-5 flight characteristics, maneuvers and landing pattern.

Requirement. Perform Tiger start, A/B takeoff, review aerobatics, introduce hard and break turns(with/without flaps), acceleration exercise (loaded/unloaded), rudder rolls, PAR approach, simulated single engine approach, no flap landings, full flap landings, drag chute full stop landings.

FAM-102 0.8 2 F-5/1 F-5F

Goal. Introuduce F-5 flight characteristics, maneuvers and landing pattern.

Requirement. Perform A/B takeoff, MRT climb, high and slow speed maneuvering, loops and barrel rolls. Hard and break turns, GCA to multiple touch and go landings, and full stop with no less than 1,000 lbs. Lead brief crosswind landing technique. If several FAM-102 sorties are flown concurrently, a single chase is acceptable provided ground and flight procedures are briefed with all participants as well as emergency procedures and area deconfliction.

FAM-103 0.8 2 F-5/1 F-5F

Goal. Further familiarization of pilot with F-5 flight characteristics, maneuvers and landing pattern.

Requirement. A/B takeoff. Practice aerobatics to include 400/450 KIAS loops starting at 10K. Split S starting at 20K and 270 to 300 KCAS. Level, acceleration from 250 to 400 KCAS with flaps in maneuver, flaps up, and unloaded flaps up. Note time for each. Section GCA/ILS to multiple touch and go landings. Full stop with no less than 1,000 lbs. If several FAM-103 events are flown concurrently a single chase is acceptable provided ground and flight procedures are briefed with all participants as well as emergency procedures and area deconfliction.

FAM-104 0.8 R 2 F-5/1 F-5F

Goal. F-5 flight envelope exploration.

Requirement. Review A/B take off, turn performance exercise. Introduce zero airspeed maneuver, vertical egg, flat scissors, rolling scissors, and guns defense. Review flied entry/break, and full flap landings. If an F-5F is not available for this flight, a dedicated attached chase is requiered for each FAM-104 flight.

FAM-105 0.8 R 2 F-5

Goal. Further familiarization of pilot with flight characteristics, maneuvers and landing pattern.

Requirement. A/B take off, flight lead separation with 10 second interval, practice formation flight to include two carrier rendezvous. Introduce tail chase with increasing diffuculty. Lead demo guns defense. Return to overhead for multiple touch and go's. Full stop with no less than 1,000 lbs.

FAM-106 0.8 R 2 F-5

Goal. Further familiarization of the pilot under instruction(PUI) with increasingly difficult maneuvers.

Requirement. A/B take off, flight lead separation. Practice formation flight to include combat spread and Soviet formations. Perform tail chase and advantage/ disadvantage maneuver. RTB to break and multiple touch and go's, and landing with no less than 1,000 lbs.

2. Instruments

a. Purpose. Develop the ability to execute precision maneuvers under instrument conditions, comply with IFR procedures, and utilizing all installed NAVAIDS.

b. General. Inst-110 may be flown as the first night event of this syllabus.

c. Flight training (1 Flight, 1.0 Hours)

INST-110 1.0 R 1 F-5E/1 F-5F

Goal. Practice instrument procedures and airways navigation.

Requirement. Fly a round robin instrument stereo route, instrument recovery, multiple GCA'a/ILS.

3. Air Intercept

a. Purpose. Introduce and develop proficiency in airborne intercept procedures in the F-5.

b. General.

(1) Prior to first flight, PUI will receive a class covering radar operation and techniques, intercept geometry and weapons systems employment.

(2) Air Intercept sorties should be flown on the TACTS range to the maximum extent possible.

(3) Captive missiles should be carried on each flight.

(4) Minimum Altitude: 1000 ft AGL day; 5,000 ft AGL night.

c. Flight Training (2 Flights, 2.4 Hours)

AI-120 1.2 2 F-5E

Goal. Introduce PUI to airborne radar operation and presentations in the beam and rear quarter environments.

Requirements. Introduce three rear quarter intercepts from 5NM trail, PUI will close to 1/2 NM co-speed. One run should be in search only. Conduct three successful intercepts from a beam position achieved. Target will be positioned at 2,000 ft above the fighter and 300 knots.

AI-121 1.2 2 F-5E

Goal. Intercept radar displays, intercept geometry in the forward quarter achieving both radar and rear quarter IR firing parameters.

Requirement. Conduct multiple medium altitude (15,000 to 20,000 ft) forward quarter (0 to 30 degree TA) culminating with radar launch, and rear quarter IR attacks. Bogey + 2,000 ft above the fighter, fighter + 25 KIAS advantage.

1642. MISSION READY TRAINING

1. Instruments

a. Purpose. Maintain currency and proficiency in flying in IMC flying and airways navigation.

b. General. Use of this flight as a refresher event, or a NATOPS/INST check or area FAM is encouraged.

c. Flight training (1 flight, 1.0 hours)

INST-200 1.0 R 1 or more F-5(day or night)

Goal. Maintain instrument proficiency.

Requirement. Perform airways navigation in accordance with existing instrument flight rules. Perform a minimum of one TACAN approach and one GCA/ILS.

2. Air-to-Air

a. Purpose. Introduce and develop proficiency in offensive and defensive maneuvering of the F-5 against similar and dissimilar bogies.

b. General.

(1) All flights must be lead by a designated AT(I) if any member of the flight is not ACM qualified or not a designated adversary tactics pilot.

(2) AA-215 must be successfully completed before continuing in this stage.

(3) Starting with AA-213, one engagement of each flight will emphasize use of forward quarter infra-red tactics and counter tactics.

c. Flight Training (11 Flights, 8.8 Hours)

AA-210 0.8 R 2 F-5

Goal. Practice defensive first move options.

Requirement. Practice gun sight tracking enroute to the area. Defensive starts with instructor or offensive perch to role reversal.

AA-211 0.8 R 2 F-5

Goal. Practice offensive maneuvering.

Requirement. Practice Soviet formations en route to the area. Perform the 180* guns drill. Practice offensive maneuvering from a perch setup.

AA-212 0.8 R 2 F-5

Goal. Review offensive and defensive maneuvering.

Requirement. Perform tail chase en route to the area. Perform two offensive setups and two defensive setups.

AA-213 0.8 R 2 F-5

Goal. Introduce neutral setups.

Requirement. Pilot under instruction shall brief and lead. Practice first move options from neutral starts to include energy fight, position fight and mirror fight.

AA-214 0.8 R 2 F-5

Goal. Review neutral maneuvering.

Requirement. Pilot under instruction shall brief and lead. Practice first move options from neutral setups.

AA-215 0.8 R,E 2 F-5

Goal. Evaluate progress in AA stage.

Requirement. Pilot under instruction shall brief and lead. Review all previously discussed maneuvers.

AA-216 0.8 R 1 F-5

Goal. Offensive and defensive maneuvering against a dissimilar aircraft.

Requirement. Practice first move options from offensive and defensive setups. Emphasis on quick kills and bugouts.

External Syllabus Support. One dissimilar adversary(CAT2/3)

AA-217 0.8 R 1 F-5

Goal. Introduce neutral maneuvering against a dissimilar aircraft.

Requirement. Practice first move options from neutral setup. Emphasis on ablility to drive fight, quick kills and bugouts.

External Syllabus Support. One dissimilar adversary(CAT4).

AA-218 0.8 R 1 F-5

Goal. Introduce neutral and offensive maneuvering against a superior aircraft.

Requirement. Practice first move options from neutral and offensive setups. Emphasis on quick kills, survivability and bug outs.

External Syllabus Support. One dissimilar adversary(CAT4).

AA-219 0.8 R 3 F-5

Goal. Introduce multi-bogey environment through 1v1v1 engagements.

Requirement. Perform 1v1v1 engagements from neutral setups, emphasis on look out doctrine, energy management, weapons employment, fuel management and bug outs.

AA-220 0.8 R 1 F-5

Goal. Introduce offensive and defensive maneuvering against a section of bogies.

Requirement. Practice single ship offensive and defensive maneuvering from neutral and offensive setups.

External Syllabus Support. 2 dissimilar adversaries.

3. Air Intercept

a. Purpose. Introduce low altitude and section intercept procedures in the F-5.

b. General.

(1) Air intercept sorties should be flown on the TACTS range to the maximum extent possible.

(2) Captive missiles should be carried on each flight.

(3) Minimum altitude: 1,000 ft AGL day, 5,000 ft AGL night.

(4) Bogies may be dissimilar aircraft.

(5) Three successful intercepts are required for completion of each flight.

c. Flight Training (2 Flight, 2.0 Hours)

AI-230 1.0 R 2 F-5E

Goal. Obtain proficiency in analyzing and intercepting an unknown target.

Requirement. Conduct forward quarter attacks with stern reattacks from a forward quarter setup against an unknown target with 30NM separation, the fighter will be based at 15,000 ft/400 knots with the bogey at 18,000 ft/400 knots. The bogey will leave assigned cap at an unknown heading, altitude, and airspeed within the following parameters: +/- 30 degrees heading, +/- 5,000 ft altitude, and +/- 100 knots airspeed. One intercept should be made with target below 5,000 ft MSL.

AI-231 1.0 R 2 F-5E

Goal. Introduce section intercept tactics and procedures against a known number of adversaries.

Requirement. Perform multiple forward quarter attacks with rear quarter re-attacks against multiple bogeys in line abreast or trail formation. Fighters will be based at 15,000 ft/350 knots with bogeys at 18,000 ft/350 knots. The bogies will leave the assigned CAP at an unknown heading, altitude and airspeed, within the following parameters: +- 30 degrees heading, +- 5,000 feet altitude, and +- 100 knots airspeed. Bogies should remain within 10 NM's of each other in trail formation.

External Syllabus Support. Two similar/dissimilar adversaries.

4. Navigation.

a. Purpose. Introduce the pilot to low altitude flying and visual navigation.

b. General.

(1) Emphasize the low altitude flight characteristics and aircraft handling of the F-5 in preparation for the LAT stage.

(2) Minumum altitude is 500ft AGL.

c. Flight Training (1 Flight, 0.8 Hours).

NAV-240 0.8 R 2 F-5/1 F-5F

Goal. Plan and execute a low level route utilizing DR navigation and visual checkpoints.

Requirement. Thoroughly plan a low level route. Emphasis on aircraft handling, fuel management , and map interpretation.

5. Low Altitude Tactics

a. Purpose. To develop proficiency in low level, high speed flight on a closed LAT circuit; to include level high "g" turns, ridgeline crossings, terrain masking and low altitude section maneuvering. The pilot should be designated as LAT qualified upon successful completion of this stage.

b. General.

(1) Flight conducted on an authorized low altitude training circuit. The circuit should be 10 to 15 minutes in length.

(2) Prerequisites for this stage are succesful completion of NAV-240 and the appropriate LAT lectures.

(3) Initial qualification or requalification on LAT-253.

(4) Pilots current and qualified in LAT do not require a chase. T&R Manual Volume 1 describes currency requirements.

(5) Various types of terrain should be utilized where feasible.

(6) Absolute minimum altitude will be 500 ft AGl.

(7) Pilots will complete each mission succesfully in the sequence listed.

(8) It should be emphasized that the concept of low altitude tactics is designed around "comfort level" (CL) and "minimum altitude capable" (MAC). Altitudes achieved are not to be considered as criteria for success.

c. Flight Training (4 Flights, 3.2 Hours)

LAT-250 0.8 R 2 F-5/1 F-5F

Goal. Introduce pilot to low altitude tactics (LAT) in the F-5 with emphasis on terrain masking, ridgeline crossing technique, NAV turns and defensive maneuvers at CL.

Requirement. Conduct a LAT flight to include: straight and level accelerations/decelerations, NAV turns, defensive break turns at comfort level, ridgeline crossings and terrain masking.

LAT-251 0.8 R 2 F-5/1 F-5F

Goal. Develop proficiency in single section LAT.

Requirement. Perform all maneuvers from LAT-250. Second circuit performed comm out, pilot under instruction is responsible for navigation.

LAT-252 0.8 R 2 F-5

Goal. Introduce the pilot to section LAT.

Requirement. Perform all maneuvers from LAT-250 in section. Fly the first circuit as lead and the second circuit as wingman.

LAT-253 0.8 R,E 2 F-5

Goal. Develop proficiency in section LAT. At the completion of this flight the commanding officer can designate the pilot LAT qualified.

Requirement. Repeat LAT-252.

1643. MISSION QUALIFICATION TRAINING

1. Air-to-Air

a. Purpose. To develop proficiency in the employment of known or potential enemy formations, engaged tactics, and armament.

b. General

(1) GCI and separate frequencies should be utilized to the greatest extent possible.

(2) TACTS should be utilized whenever possible.

(3) Upon successful completion of AA-300 through AA-305E the pilot is considered ACM qualified and can conduct ACM per the T&R Manual, Volume 1.

(4) Upon succesful completion of the entire mission qualified syllabus the pilot shall be designated (at the discretion of the commanding officer) an adversary tactics pilot and can conduct ACM, per T&R Manual, Volume 1.

(5) Until a pilot is ACM qualified all ACM flight must be lead by a designated ATI.

(6) U.S. tactics will not be used unless specifically requested by adversaries.

c. Flight Training (7 Flights, 5.6 Hours)

AA-300 0.8 R 2 F-5

Goal. Introduce known and potential Fishbed intercept tactics, emphasis on Fishbed formations.

Requirement. Perform intercepts and canned setups to engagements under GCI control (if available). Wingman concentrate on flying Fishbed formations until cleared to engage by lead. Emphasis on proper visual employment of Fishbed armament.

External Syllabus Support. Two dissimilar adversaries.

AA-301 0.8 R 2 F-5

Goal. Introduce Fishbed decoy tactics and separate vector attacks against adversary CAPS/SWEEPS.

Requirement. Perform intercepts (and canned setups) to engagements under GCI control (if available). Emphasis on decoy tactics and separate vector considerations.

External Syllabus Support. Two dissimilar adversaries.

AA-302 0.8 R 2-4 F-5

Goal. Introduce basic Flogger close control tactics and forward quarter IR tactics/countertactics against adversary CAPS/SWEEPS.

Requirement. Perform intercepts under GCI control (if available) to engagements, emphasis on known Flogger tactics, introduce known or suspected forward quarter IR tactics/countertactics, and use of F-5 to simulate Flogger.

External Syllabus Support. Two dissimilar adversaries.

AA-303 0.8 R 2-4 F-5

Goal. Practice Flogger intercept and forward quarter engagement tactics.

Requirement. Perform known radar tactics during intercept to forward quarter engagement. Emphasis on tactical cooperation, situation awareness, use of F-5 to simulate Flogger, and proper employment of Flogger forward quarter armament.

External Syllabus Support. Two dissimilar adversaries.

AA-304 0.8 R 4 F-5

Goal. Conduct Fishbed or Flogger tactics under GCI control (if available).

Requirement. Perform known or potential Fishbed or Flogger style intercepts to engagements. Emphasis on proper employment of section/division against adversary CAP. Practice sweeps, section integrity, visual search techniques, and engaged tactics.

External Syllabus Support. Two to four dissimilar adversaries.

AA-305 0.8 R,E 2-6 F-5

Goal. Evaluate advanced Fishbed and Flogger intercept tactics.

Requirement. F-5 will use advanced Fishbed and Flogger tactics on all intercepts. Maximum intercept training is desired. Pilot under instruction will brief and lead.

External Syllabus Support. Two to four dissimilar adversaries.

AA-306 0.8 R 2-6 F-5

Goal. Conduct intercepts and/or visual setups against multiple adversaries utilizing multiple sections or divisions.

Requirement. Conduct multiple engagements in a sterile environment, emphasizing shots of opportunity, disengagement, survivability and section or division integrity.

External Syllabus Support. Two to six dissimilar adversaries.

2. Surface Attack

a. Purpose. Develop proficiency in employing the F-5 in the surface attack role.

b. General

(1) Emphasis will be placed on developing proficiency in U.S. one non-U.S. style tactics.

(2) No ordnance will be carried other than captive AA missile.

(3) ECM should be used (if available and requested).

(4) Flight below 500 ft AGL is not authorized.

c. Flight Training (1 Flight, 0.8 Hours)

SA-320 0.8 R 2(or more)F-5

Goal. Develop proficiency in employing U.S. and non-U.S. section tactics against a surface target(s).

Requirement. Perform multiple attacks against a surface target(s). Emphasize using known or potential non-U.S. tactics. Should include, but is not limited to, timed attacks with sequential reattacks.

3. Helicopter Attack

a. Purpose. Develop proficiency in employing the F-5 against a helicopter threat.

b. General.

(1) All flights will adhere to TR's and ACM flights requirements per T&R Manual, Volume 1 and OPNAVINST 3710.7.

(2) Pilot must be ACM qualified as outlined in this chapter.

(3) Pilot must be LAT qualified as outlined in this chapter and LAT current as outlined in T&R Manual, Volume 1.

(4) Pilot must brief/debrief coordination and control procedures, threat counter procedures, and offensive procedures during their individual briefs and during the common debrief.

(5) Emphasis will be placed on developing prodiciency in U.S. and non U.S. tactics as well as simulated employment of U.S. and non U.S. armament.

(6) These events should be flown in conjunction with related helicopter ACM syllabus events.

c. Flight Training (3 Flights, 2.4 Hours)

HA-330 0.8 R 1 F-5

Goal. Introduce 1v1 maneuvering in the F-5 against a maneuvering helicopter.

Requirement. Conduct visual attacks against a helicopter utilizing either air-to-air or air-to-ground ordnance (simulated).

External Syllabus Support. One helicopter.

HA-331 0.8 R,E 2 F-5

Goal. Develop proficiency in employing section tactics against multiple maneuvering helicopters.

Requirement. Conduct visual attacks against multiple maneuvering helicopters. Emphasize the use of non-U.S. tactics and armament (unless otherwise requested).

External Syllabus Support. Two or more helicopters.

HA-332 0.8 R,E 1 F-5

Goal. Develop proficiency in employing single ship tactics against multiple maneuvering helicopters.

Requirement. Conduct visual attacks against multiple maneuvering helicopters utilizing single ship tactics. Emphasize the use of non U.S. tactics and armament (unless otherwise requested).

External Syllabus Support. Two or more helicopters.

4. Strike Intercept.

a. Purpose. Develop proficiency in employing U.S. and non-U.S. tactics and armament against multi-plane strike formations in a medium-to-low altitude environment.

b. General.

(1) Flight below 500 feet AGL is not authorized.

(2) Special attention shall be paid to the T&R's listed in the T&R Manual.

(3) Pilots must brief/debrief coordination and control procedures, threat counter procudures, and offensive procedures during their individual briefs and during the common debrief.

(4) Special emphasis shall be placed on developing proficiency in the use of non-U.S. tactics and weapons employment.

(5) Use of GCI is encouraged but not required.

c. Flight Training (2 Flights, 1.6 Hours).

SI-340 0.8 R 1 or more F-5

Goal. Introduce single ship/section tactics against multi-plane strike formations.

Requirement. Conduct visual attacks against low-to-medium altitude multi-plane strike formations during ingress or egress. Emphasize the use of non-U.S. tactics and weapons employment.

External Syllabus Support. Four or more dissimilar adversaries.

SI-341 0.8 R 3 or more F-5

Goal. Develop proficiency in employing division tactics against multi-plane strike formations.

Requirement. Utilizing non-U.S. concepts of vital area defense, conduct visual attack against medium-to-low altitude multi-plane strike formations. Emphasize the use of non-U.S. division tactics and weapons employment.

External Syllabus Support. Four or more dissimilar adversaries.

1644. FULL-MISSION QUALIFICATION TRAINING

1. Air-to-Air

a. Purpose. Further develop proficiency in utilizing threat tactics to successfully intercept, engage, and disengage from adversary aircraft.

b. General.

(1) Due to the complex nature of these flights, flight leads shall be designated ATI's.

(2) All general comments from previous air-to-air training apply to this stage.

(3) GCI should be used to enhance realism.

c. Flight Training (6 Flights, 4.8 Hours).

AA-410 0.8 R 4 F-5

Goal. Introduce composite force tactics.

Requirement. Using either U.S. or non-U.S. composite force tactics, intercept, engage, and negate adversary air superiority force. Emphasize composite force consideration, engaged tactics, and weapons employment.

External Syllabus Support. Two to four friendly strike aircraft and two to four dissimilar adversaries.

AA-411 0.8 R 4-6 F-5

Goal. Practice advanced Fishbed intercept and engagement techniques in a realistic multi-aircraft air superiority environment.

Requirement. Utilizing known and potential advanced Fishbed tactics; intercept, engage, and disengage from adversary CAP/SWEEPS. Emphasize intercept techniques, and Fishbed armament employment.

External Syllabus Support. Two or more dissimilar adversaries.

AA-412 0.8 R 4-6 F-5

Goal. Practice advance Flogger intercept and engagement techniques in a realistic multi-aircraft air superiority environment.

Requirement. Utilizing known and potential Flogger tactics; intercept, engage, and disengage from adversary CAP/SWEEPS. Emphasize intercept techniques, BVR shot opportunities, disengagement techniques, and Flogger weapons employment.

External Syllabus Support. Two or more dissimilar adversaries.

AA-413 0.8 R 6-8 F-5

Goal. Practice multi-division advanced threat tactics.

Requirement. Utilizing known or potential multi-division advanced threat tactics; intercept, engage, and disengage from adversary CAPS/SWEEPS. Emphasis on tactical cooperation, rapid kills, and situation battle awareness.

External Syllabus Support. Four or more dissimilar adversaries.

AA-414 0.8 R 6-8 F-5

Goal. Practice multi-division advanced threat tactics.

Requirement. Intercept and disengage from adversary CAP/SWEEPS utilizing known or potential multi-division Flogger tactics. Emphasis on BVR shot opportunities, minimum in-close maneuvering,and disengagement techniques.

External Syllabus Support. Four or more dissimilar adversaries.

AA-415 0.8 R 8-12 F-5

Goal. Practice threat squadron tactics.

Requirement. Using known or potential threat squadron tactics, intercept and negate an adversary air superiority force. Emphasis is on intercept technique, BVR shot opportunities, minimum in close maneuvering, and disengagement techniques.

External Syllabus Support. Four or more dissimilar adversaries.

2. Helicopter Attack

HA-420 0.8 R 2(or more) F-5

Goal. Practice threat tactics against large numbers of helicopters.

Requirement. Conduct visual attacks on multi-plane helo formations. Emphasize use of non-U.S. division tactics, mutal support, direct and sequential attacks. Various SAM threat scenarios should be simulated.

External Syllabus Support. An unknown number of helicopters with or without escort.

3. Anti-Air Warfare.

a. Purpose. Develop proficiency in planning and executing the airborne of an IADS.

b. General.

(1) Due to comlex nature of these flights the mission commander shall be a designated ATI and flight leads shall be designated ATP's.

(2) When appropriate, non-U.S. tactics shall be utilized.

(3) All general comments from previous air-to-air training apply to this stage.

c. Flight Training (2 Flights, 1.6 Hours)

AAW-430 0.8 R 2 or more F-5

Goal. Develop proficiency in simulating U.S. and non-U.S. strike escort tactics.

Requirement. Plan and execute a coordinated strike into a simulated sophisticated threat environment. Emphasize(when appropriate) non-U.S. strike escort tactics.

External Syllabus Support. Two or more friendly strike aircraft vs two or more dissimilar adversaries.

AAW-431 0.8 R 2 or more F-5

Goal. With the help of a gound based air defense unit, defend a vital area against a coordinated strike.

Requirement. Plan and execute a non-U.S. style IADS. Emphasize the use of SAM's in the IADS. When appropriate, utilize non-U.S. concepts of vital area defense.

External Syllabus Support. An unknown number of dissimilar adversaries.

1650. INSTRUCTOR AND SPECIAL FLIGHT PERFORMANCE REQUIREMENTS

1651. ADVERSARY TACTICS INSTRUCTOR COURSE

1. Purpose. To certify pilots capable of conducting ground and airborne instruction of adversary air combat maneuvers, threat weapons, surface attack tactics, and help attack tactics as well as the flight envelope of the F-5.

2. General

a. Conduct ground and airborne instruction of air combat maneuvers and the F-5 envelopes.

b. Conduct ground and airborne instruction in use of the F-5 as a threat simulator.

c. Brief, lead, and debrief (as and adversary) tactical flights against Fleet and Reserve squadrons.

d. Fulfill the safety/leadership requirements for ACM per T&R Manual, Volume 1 and OPNAVINST 3710.7.

e. Squadron academics syllabus:

(1) F-5 flight characteristics/limitations.

(2) Briefing and debriefing.

(3) F-5 as a threat simulator.

(4) Threat formations and tactics.

(5) Threat air-to-air weapons.

(6) ACM ROE.

(7) Examination.

3. Flight Training (3 Flights, 2.4 Hours)

a. Flight syllabus. An F-5 ATI will conduct the build-up phase to prepare the prospective ATI for certification by the commanding officer. The prospective ATI will demonstrate the capability to: brief, debrief, and instruct basic tactical maneuvers in a 1v1, and a multi-plane scenario. The build-up should include the following events:

(1) 1v1 similar - offensive and defensive setups.

(2) 1v1 similar - neutral setups.

(3) 1v1 dissimilar - offensive, defensive, and neutral setups.

(4) One (1) 2v2 or greater - emphasis on threat formation, tactics, and weapon simulation and debrief.

(5) One (1) 4vX utilizing complex flogger tactics with emphasis on intercept presentation and debrief.

b. The prospective ATI will demonstrate to the squadron instructor the ability to brief, lead, and debrief the following flights:

AA-500 0.8 E 1 F-5

Goal. To evaluate the prospective ATI's ability to brief, conduct and debrief a 1v1 dissimilar/similar flight.

Requirement. Conduct eye ball calibration drill, guns weave exercise, at least one offensive, defensive, or neutral setup, and guns defense. Additional emphasis placed on the brief and debrief.

External syllabus support. One similar or dissimilar adversary.

AA-501 0.8 E 2 F-5

Goal. To evaluate the prospective ATI's ability to successfully/safely conduct and control, brief and debrief a 2v2 dissimilar flight.

Requirement. Conduct at least two setups from beyond visual range utilizing GCI or TACTS (if available). Emphasis should be placed on pre-merge radar missile employment and defense to a IR reattack or disengagement. Conduct at least one visual setup with emphasis placed on quick kills and disengagement. Additional emphasis placed on the brief and debrief.

External syllabus support. Two dissimilar advarseries.

AA-502 0.8 E 2-4 F-5

Goal. To evaluate the prospective ATI's ability to successfully/safely conduct and control, brief and debrief a multi-aircraft dissimilar flight.

Requirement. Conduct at least two setups from beyond visual range with emphasis on threat pre-merge formations and tactics, radar missile employment and defense to a IR missile reattack or disengagement. Additional emphasis placed on the brief and debrief.

External syllabus support. Two dissimilar advarseries.

c. Prerequisites.

(1) Secret Clearence.

(2) Minimum or 100 hours in the F-5.

(3) Designated ATP/Division Leader.

(4) Completed course requirements.

d. Recertification. Former F-21 ATI's or Top Gun adversary course graduates will fly an AA-501 Evaluated mission demonstrating the ability to lead, brief, and debrief.

e. Prerequisites.

(1) Secret Clearence.

(2) Minimum or 100 hours in the F-5.

(3) Designated ATP/Division Leader.

(4) Completed course requirements.

1652. LOW ALTITUDE TACTICS (INSTRUCTOR) COURSE

1. Purpose. Produce an instructor capable of teaching low altitude tactics in a safe and progressive manner commensurate with an individual pilot's ability. The instructor will be able to recognize degradation in performance in low altitude tactics so that an individual will not be placed in an unsafe situation. The LAT(I) will establish minimum altitudes for various phases of low altitude flight on the basis of an individual's recent demonstrated performance, but not to exceed the T&R syllabus absolute minimum altitude.

2. General

a. Squadron academics syllabus

(1) LAT concepts.

(2) LAT considerations.

(3) Formations.

(3) Advanced maneuvering.

(4) Instructor techniques.

3. Flight Training (2 Flights, 1.6 Hours)

LAT-510 0.8 E 2 F-5E/1 F-5F

Goal. Evaluate prospective LAT(I)'s knowledge of single aircraft LAT concepts and considerations to include the ability to safely conduct LAT.

Requirement. As a chased or single F-5F, conduct a LAT flight to include: straight and level acceleration/ decelerations, minimum altitude capable with "S" turns, defensive break turns at a comfort level, ridgeline crossing, and terrain masking.

LAT-511 0.8 R 2 F-5

Goal. Evaluate prospective LAT(I)'s ability to brief, lead, and debrief section and chased maneuvering in the LAT envionment.

Requirement. On first lap LAT(I) flies chase position on evaluator, on successive laps LAT(I) acts as section lead and conducts section maneuvering. Emphasis placed on brief, debrief, and safe conduct.

3. Post Maintenance Check Flight Instructor

a. Purpose. Provide instructor pilots with standardized procedures and instructional techniques required to successfully complete a PMCF.

b. General. The syllabus consists of 1 hour of classroom instruction, and a written exam.

c. Flight Training (2 Flights, 1.6 Hours)

PMCF-520 0.8 2 F-5/1 F-5F

Goal. Introduce normal and emergency PMCF procedures with PUI chased by instructor.

Requirement. Introduce ground and airborne PMCF procedures to include preglight start, takeoff, and in flight data recording.

PMCF-521 0.8 R 1 F-5

Goal. Allow PUI to review all ground and airborne functional check flight procedures.

Requirement. As a solo, review all functional check flight procedures to include preflight, start, takeoff, and in flight data.

T&R MANUAL, VOLUME 5

AIRCRAFT: F-5 MOS: 75XX CREW POSITION: PILOT

FLIGHT STAGE	TRAINING CODE	HRS	REFLY INTERVAL	CRP	C	R	REMARKS
MISSION CAPABLE TRAINING							
FAM	99	-.-	-	-.-	X		
	100	0.8	*	3.5	X		
	101	0.8	*	3.5	X		
	102	0.8	*	3.5	X		
	103	0.8	*	3.5	X		
	104	0.8	*	3.5	X	X	
	105	0.8	*	3.5	X	X	
	106	0.8	*	3.5	X	X	
INST	110	1.0	*	3.5	X	X	
AI	120	1.2	*	3.5	X		
	121	1.2	*	3.5	X		
MISSION READY TRAINING							
INST	200	1.0	3	0.5	X	X	
AA	210	0.8	6	0.5	X	X	
	211	0.8	8	0.5	X	X	
	212	0.8	8	0.5	X	X	
	213	0.8	8	0.5	X	X	
	214	0.8	8	0.5	X	X	
	215	0.8	8	0.7	X	X	
	216	0.8	6	0.5	X	X	
	217	0.8	6	0.5	X	X	
	218	0.8	6	0.5	X	X	
	219	0.8	8	0.5	X	X	
	220	0.8	8	0.5	X	X	
AI	230	1.0	9	0.5	X	X	
	231	1.0	9	0.5	X	X	
NAV	240	0.8	C	0.5	X	X	
LAT	250	0.8	6	0.5	X	X	
	251	0.8	6	0.5	X	X	
	252	0.8	6	0.5	X	X	
	253	0.8	6	0.5	X	X	

FLIGHT STAGE	TRAINING CODE	HRS	REFLY INTERVAL	CRP	C	R	REMARKS
MISSION QUALIFICATION TRAINING							
AA	300	0.8	8	1.0	X	X	
	301	0.8	8	1.0	X	X	
	302	0.8	8	1.0	X	X	
	303	0.8	8	1.0	X	X	
	304	0.8	8	1.0	X	X	
	305	0.8	8	2.0	X	X	E
	306	0.8	8	1.0	X	X	
SA	320	0.8	C	1.0	X	X	
HA	330	0.8	6	1.0	X	X	
	331	0.8	6	1.0	X	X	
	332	0.8	6	2.0	X	X	E
SI	340	0.8	C	1.0	X	X	
	341	0.8	C	1.0	X	X	
FULL-MISSION QUALIFICATION TRAINING							
AA	410	0.8	8	1.5	X	X	
	411	0.8	8	1.5	X	X	
	412	0.8	8	1.5	X	X	
	413	0.8	8	1.5	X	X	
	414	0.8	8	2.0	X	X	
	415	0.8	8	2.0	X	X	
HA	420	0.8	C	2.0	X	X	
AAW	430	0.8	C	1.5	X	X	
	431	0.8	C	1.5	X	X	
INSTRUCTOR AND SPECIAL FLIGHT REQUIREMENTS							
ATI	500	0.8					E
	501	0.8					E
	502	0.8					E
LATI	510	0.8					E
	511	0.8					E
PMCF	520	0.8					
	521	0.8				X	
REQUIRED TRAINING FLIGHTS							
REQ	600	1.0	C			X	
	601	1.0	C			X	

PILOT FLIGHT UPADATE CHAIN

STAGE	FLIGHT	FLIGHT UPDATED
INST	200	
AA	210	
	211	210
	212	210,211
	213	210,211,212
	214	210,211,212,213
	215	210,211,212,213,214
	216	
	217	216
	218	217,217
	219	
	220	219
AI	230	
	231	230
NAV	240	
LAT	250	
	251	250
	252	250,251
	253	250,251,252
AA	300	230,231
	301	230,231,300
	302	230,231,300,301
	303	230,231,300,301,302
	304	230,231,300,301,302,303
	305	230,231,300,301,302,303,304
	306	230,231,300,301,302,303,304,305
SA	320	
HA	330	250,251
	331	250,251,330
	332	250,251,330,331
SI	340	
	341	340
AA	410	230,231
	411	230,231,410
	412	230,231,410,411
	413	230,231,410,411,412
	414	230,231,410,411,412,413
	415	230,231,410,411,412,413,414
HA	420	230,231,252,253,330,331,332
AAW	430	230,231,410,411,412,413,414
	431	230,231,410,411,412,413,414,430

STAGE	FLIGHT	FLIGHT UPDATED
ATI	500	
	501	
	502	
LATI	510	
	511	
PMCF	520	
	521	