TC 1-216

AIRCREW TRAINING MANUAL
CARGO HELICOPTER, CH-47

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Training Circular
No. 1-216

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 8 October 1992

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*This publication supersedes TC 1-216, 25 November 1987, and pages 7-1 through 7-31, FM 1-544, 4 September 1990.

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Section II. Evaluation Guidelines

BLANK FORMS

DA Form 4507-R (Standard Evaluation/Training Grade Slip)
DA Form 4507-2-R (Continuation Comment Slip)
DA Form 4887-R (RW Performance Planning Card)
DA Form 5051-5-R (Maintenance Test Flight Maneuvers Grade Slip (CH-47))
DA Form 5667-R (Maneuver/Procedure Grade Slip for CH-47 Crew Members)
DA Form 7121-R (Battle-Rostered Crew Evaluation/Training Grade Slip)

PREFACE

This manual provides specific guidelines for executing CH-47 aircrew training. It is based on the battle-focused training principles outlined in FM 25-101. Used with TC 1-210, this manual will help aviation commanders at all levels develop a comprehensive aircrew training program. It encompasses individual and collective training and establishes crew member qualification, refresher, mission, and continuation training requirements.

Planning, preflight, and in-flight tasks involve the cooperative effort of all crew members. The prescribed tasks, conditions, standards, and descriptions explain each crew member's responsibilities for the successful completion of maneuvers. Each crew member must understand the actions and directives of the other crew members. This enhances crew coordination and unit interoperability and helps prevent accidents caused by human error.

The crew coordination descriptions in Chapter 6 do not focus exclusively on individual training. Instead, they blend individual training with collective training and provide a link to field manuals, ARTEP mission training plans, and other doctrinal and training material. The goal is to develop cohesive, battle-rostered, combat-ready CH-47 crew members.

This manual applies to unit commanders, trainers, evaluators, maintenance test pilots, and crew members who operate CH-47 aircraft. The ATMs are basic documents that standardize aircrew training programs and flight evaluation procedures. By using the ATMs, commanders ensure that individual crew member and aircrew proficiency is commensurate with their units' mission. They also ensure that aircrews routinely employ standard techniques and procedures. Unit commanders must provide specific guidance for implementing the training outlined in this manual.

TM 55-1520-240-10 contains aircraft operating procedures. If differences exist between the maneuver descriptions in the technical manual and this manual, this manual is the governing authority for training and flight evaluation purposes. Implementation of this manual conforms to AR 95-1, AR 95-3, and TC 1-210. If a conflict exists between this manual and TC 1-210, TC 1-210 takes precedence.

The proponent of this publication is HQ TRADOC. Send comments and recommendations on DA Form 2028 through the aviation unit commander to Commander, US Army Aviation Center, ATTN: ATZQ-TDI, Fort Rucker, AL 36362-5263.

This publication implements portions of STANAG 3114 (Edition Six)/Air Standard 60/16, Aeromedical Training of Flight Personnel.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

This publication has been reviewed for operations security considerations.

CHAPTER 1

INTRODUCTION

This ATM describes the training requirements for CH-47 crew members. It will be used with AR 95-1, AR 95-3, AR 600-105, AR 600-106, NGR 95-210, TC 1-210, and other applicable publications. The tasks in this ATM enhance training in both crew member and aircrew proficiency. The training focuses on the accomplishment of tasks that support the unit's mission. The scope and level of training to be achieved individually by crew members and collectively by aircrews will be dictated by the METL. Commanders must ensure that aircrews are proficient in mission-essential tasks.

1-1. BATTLE ROSTERING

Battle rostering is the designation of two or more individuals to perform as a crew. Consistently assigning the same crews together improves crew coordination. Commanders make battle-rostered assignments and should enforce their practice, when possible, consistent with crew resources available within the unit. They should assign an individual to a crew as soon as possible after his arrival in the unit, even if he is required to undergo qualification, refresher, or mission training. The individual may begin flying as a member of that crew while in mission training based on the recommendation of an evaluator.

1-2. SYMBOL USAGE AND WORD DISTINCTIONS

a. Symbol Usage. The diagonal (/) is used to indicate or or and. For example, IP/SP may mean IP or SP or may mean IP and SP.

b. Word Distinctions.

(1) Warnings, cautions, and notes. These words emphasize important and critical instructions.

(a) A warning indicates an operating procedure or a practice which, if not correctly followed, could result in personal injury or loss of life.

(b) A caution indicates an operating procedure or a practice which, if not strictly observed, could result in damage to or destruction of equipment.

(c) A note highlights essential information which is not of a threatening nature.

(2) Will, must, should, and may. These words distinguish between mandatory, preferred, and acceptable methods of accomplishment.

(a) Will or must indicates a mandatory requirement.

(b) Should indicates a preferred, but not mandatory, method of accomplishment.

(c) May indicates an acceptable method of accomplishment.

(3) NVG. This refers to any night vision goggle image intensifier system; for example, the AN/AVS-6 (ANVIS).

(4) Rated crew member. The RCMs are aviators. Therefore, the terms "rated crew member," "aviator," and "pilot" are used synonymously.

(5) Nonrated crew member. The NCMs who perform CH-47 crew duties are divided into two categories: flight engineer and crew chief. An NCM is qualified when he completes all phases of training, the appropriate qualification course, and the evaluation outlined in Chapter 8.

(a) Flight engineer. The FE is responsible for maintaining his assigned aircraft and performing nonrated crew duties. He is the supervisor and primary trainer for the crew chief and mechanics assigned to that aircraft. The commander selects NCMs to perform FE duties based on proficiency, experience, and rank.

(b) Crew chief. The CE assists the FE in maintaining his assigned aircraft and performing nonrated crew duties.

NOTE 1: When the CH-47 crew consists of one nonrated and two rated crew members, the NCM must be a commander-designated flight engineer.

NOTE 2: Unless otherwise specified, the abbreviation CE in the task descriptions refers to either the crew chief or the flight engineer.

(6) Evaluator. Unless otherwise specified, the word evaluator refers to the IP, SP, IE, FI, SI, or ME.

CHAPTER 2

QUALIFICATION TRAINING

This chapter prescribes the minimum qualification training requirements for CH-47 crew members. Initial RCM qualification training is conducted at the USAAVNC and designated training bases. An ARNG RCM is allowed 90 consecutive days to complete aircraft qualification training. (ARNG aviators should refer to NGR 95-210.) Reserve component commanders may waive the requirement that the RCM complete category instrument training before performing pilot duties. Pending completion of instrument training, the RCM may log pilot time and act as the PC if an entry is made on DA Form 759 (Individual Flight Record and Flight Certificate---Army) to indicate such authority. Qualification training for NCMs is conducted at the unit per this chapter, applicable regulations, and the commander's ATP. Qualification training for FIs is conducted at the USAAVNC and designated training bases. Crew members must complete both academic and flight training and pass the required written examination or examinations within 90 consecutive days.

2-1. ACADEMIC TRAINING

a. During academic training, the crew member must receive sufficient instruction to be knowledgeable in the subjects listed in Figure 2-1. Academic training should be completed before the corresponding flight training. The subjects may be presented in any order; however, the introduction should be first and the written examinations last. To pass the examination or examinations, crew members must obtain a grade of at least 70 percent. Aircraft systems instruction includes training in operation, capabilities, limitations, and malfunction analysis.

b. When an applicable USAAVNC course or ETP is available, POIs and lesson plans from the USAAVNC must be used to conduct training. Although hour requirements in the POIs are not mandatory, training objectives are. Training materials may be obtained by writing Commander, US Army Aviation Center, ATTN: ATZQ-TDI-D, Fort Rucker, AL 36362-5035, or calling DSN 558-3283/5990 or commercial (205) 255-3283/5990. When an applicable USAAVNC course is not available, ARNG units must use POIs and lesson plans approved by the Chief, National Guard Bureau.

Introduction
Maintenance forms and records
Structure
Fuel and oil systems
Power plant and related systems
Transmission and drive systems
Rotor systems
Electrical systems
Flight controls
Emergency procedures[1]
Hydraulic systems
Utility systems
Weight and balance
Avionics and mission equipment[1]
Inspection requirements
Landing gear, wheels, and brakes
Cargo winching and loading
Cargo tie-down and storage
Aircraft limitations
Performance planning charts[2]
Aviation life support equipment[3]
Doppler navigation[2]
Advanced flight control system
Armament subsystems
Aircraft operator's manual written examination
Maintenance manual written examination[3]

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[1]These subjects may be covered on the flight line by an evaluator.
[2]These subjects pertain to RCMs only.
[3]These subjects pertain to NCMs only.

Figure 2-1. Academic subjects for initial CH-47 qualification

2-2. FLIGHT TRAINING

a. **Rated Crew Member.** During flight training, the RCM is trained to standards in the base tasks listed in Chapter 5 and those mission and/or additional tasks selected by the commander. Figure 2-2 shows the minimum flight tasks and hours allotted for general subject areas. Flight time will not be less than that indicated in Figure 2-2.

Tasks	Hours
Flight planning[1]	-
Before-flight[1]	-
Basic flight[2]	14.0
Emergency[3]	-
Instrument flight	3.0
Mission[2]	11.0
After-landing[1]	-
Flight evaluation	2.0
Total hours[4,5]	30.0

[1]Although these tasks apply to flight instruction, they are not considered as part of the total flight time.

[2]Three hours will be at night and will include a combination of takeoff, basic flight, approach and landing, hovering, and mission tasks.

[3]Emergency procedures are integrated in day, night, and instrument procedures.

[4]If a CH47FS is available and used for qualification training, total aircraft flight time may be reduced to no less than 21 hours with a minimum of 12 hours in the CH47FS.

[5]Total time includes training in both crew stations.

Figure 2-2. Minimum flight tasks and hours for rated crew members

NOTE: The information in paragraph 2-1b also applies to the initial CH-47 qualification flight training shown in Figure 2-2.

(1) Commanders must ensure that realism is maintained during qualification flight training. This includes operation of the aircraft at or near maximum gross weight.

(2) Training in night operations must include the location and operation of all aircraft lighting equipment. It also should include takeoffs and landings with minimum runway or field lighting appropriate for the mission and ambient light conditions.

b. Nonrated Crew Member. During flight training, the NCM is trained to standards in the base tasks listed in Chapter 5 and those mission and/or additional tasks selected by the commander. Figure 2-3 shows the minimum flight tasks and hours allotted for general subject areas. In no case will the total flight time be less than that indicated.

NOTE: More effective training and greater learning retention will result if flight training is completed without interruption.

Tasks	Hours
Run-up[1]	-
Before-flight[1]	-
In-flight[2]	2.0
Emergency	1.0
Mission[2]	3.0
After landing[1]	-
Flight evaluation[3]	2.0
Total hours	8.0

[1]These tasks are considered flight instruction, even though flight time is not being logged.
[2]One hour will be at night, consisting of a combination of basic flight and mission tasks.
[3]This evaluation is described in paragraph 8-3.

Figure 2-3. Minimum flight tasks and hours for nonrated crew members

2-3. INITIAL NVG QUALIFICATION TRAINING

a. Initial NVG qualification training will be conducted according to this ATM and TC 1-210, Chapter 4. Before undergoing NVG qualification training, an RCM must be qualified and current in the aircraft. He must complete the NVG training within 45 consecutive days. Figure 2-4 shows the recommended flight tasks and hours for rated crew members.

Tasks	Hours
Flight planning[1]	-
Before-flight[1]	-
Basic flight[2]	6.0
Emergency	2.0
Instrument	0.5
Mission	6.5
After-landing[1]	-
Total hours[3]	15.0

[1]Although these tasks apply to flight instruction, they are not considered as part of the total flight time.
[2]Basic flight will include hovering, takeoff, and approach and landing tasks.
[3]The commander may reduce the total time to no less than 10 hours based on the evaluator's recommendation concerning the RCM's proficiency. The training must be conducted in the CH-47.

Figure 2-4. Flight tasks and hours for initial NVG qualification for rated crew members

b. Before the first NVG training flight, the NCM must undergo a one-hour training period at night in the aircraft. Minimum tasks the NCM must perform are aircraft emergency procedures, NVG emergency procedures, and emergency egress procedures. The NVG flight evaluation may be applied toward the flight minimum required for NVG qualification. Figure 2-5 shows those tasks which the crew member must perform during NVG qualification training. During the training, the RCM must occupy a crew station with access to the flight controls; the NCM must perform crew duties. After the crew member completes the training, his proficiency will be determined by a flight evaluation or by continual evaluation by an NVG evaluator.

Task	Title
1000	Participate in crew mission briefing
1007	Perform engine-start through takeoff checks
1015	Perform ground taxi
1017	Perform hovering flight
1018	Perform a VMC takeoff
1022	Perform traffic pattern flight
1023	Perform cruise check procedures
1025*	Navigate by pilotage and dead reckoning
1026*	Perform doppler/omega navigation
1027	Perform before-landing check
1028	Perform VMC approach
1032	Perform slope operations
1068	Perform or describe emergency procedures
1083*	Perform or describe inadvertent IMC procedures/ VHIRP
1098	Perform after-landing tasks
2072	Perform emergency procedures for actual or simulated NVG failure
2079*	Perform terrain flight navigation
2081	Perform terrain flight
2086	Perform masking and unmasking
2087	Perform terrain flight deceleration

*This task applies to RCMs only.

Figure 2-5. Training tasks for NVG qualification training

CHAPTER 3

REFRESHER TRAINING

The refresher training program is designed for RL 3 crew members. It enables them to regain proficiency in all base tasks. This chapter describes refresher training requirements and provides guidelines for developing refresher training programs.

3-1. TRAINING REQUIREMENTS

A crew member returning to an operational flying position after having been prohibited or excused from flying duties for more than 180 consecutive days will receive refresher training. When the crew member enters the unit's ATP with fewer than 180 consecutive days of nonflying duties, the commander may require him to undergo refresher training based on a records check or proficiency flight evaluation. Refresher training may include academic instruction and practice of all base tasks. During refresher training, a crew member does not have minimum hour, task, iteration, or APART requirements in the aircraft in which the training is being conducted. In addition to any requirements designated by the commander, an NCM must meet the requirements in AR 600-106.

a. A crew member is designated RL 3 when he meets the criteria in TC 1-210. Figures 3-1 and 3-2 are furnished as guides for developing refresher training programs.

b. Applicable USAAVNC ETPs, POIs, and lesson plans may be used to conduct academic training. Paragraph 2-1b contains information about ordering these training materials.

3-2. NIGHT TRAINING

a. Unaided Night Flight. Task requirements are listed in Chapter 5 (Figure 5-1) and are indicated by an X in the night column. Night considerations for tasks (when applicable) are in Chapter 6.

b. NVG Refresher Training. The crew member must complete the requirements in Chapter 4 of TC 1-210. NVG considerations for tasks (when applicable) are in Chapter 6 of this ATM.

Aircraft systems, structure, and airframe
Avionics
Weight and balance
Operational limitations
Flight planning, to include DOD FLIP and performance planning charts*
Instrument departures, en route navigation, and reporting*
Instrument approaches*
Emergency procedures
Local SOPs and regulations
Ground and air safety
Aircraft operator's manual written examination

*This subject applies to RCMs only.

Figure 3-1. Refresher academic training guide

Flight Instruction	Hours
Local area orientation	2.0
Demonstration and practice of base tasks	6.0
Flight evaluation	2.0
Total hours	10.0

Instrument Instruction	Hours
Flight or simulator training	12.0
Instrument evaluation	2.0
Total hours	14.0

Figure 3-2. Refresher flight training guide

CHAPTER 4

MISSION TRAINING

Mission training develops the crew member's and aircrew's ability to perform specific tasks selected by the commander to support the unit's mission. A crew member begins mission training after he completes qualification or refresher training. He also may enter the mission phase of training after a records check or proficiency flight evaluation.

4-1. TRAINING REQUIREMENTS

a. The commander is responsible for developing mission training programs which emphasize tasks that are unique to the unit's operational mission, Army training and evaluation program, and geographical area. Training programs will include tasks required by the unit's mission and the task list developed for the crew position.

b. The goal of mission training is proficiency in mission-related tasks. During mission training, a crew member does not have minimum hour, task, iteration, or APART requirements in the aircraft in which the training is being conducted. The only requirements an RCM has are those designated by the unit commander and AR 95-1 (currency). NCM requirements are designated by the unit commander and AR 600-106. The mission training (RL 2) guidelines in Figure 4-1 are based on FAC 1 requirements for mission tasks. Mission training should be done during mission support or collective training. A crew member has completed mission training when he meets the requirements of this ATM and TC 1-210.

4-2. NIGHT TRAINING

a. **Unaided Night Flight.** Tasks which the commander may designate for unaided night flight are listed in Chapter 5. Night considerations for tasks (when applicable) are in Chapter 6.

b. **NVG Flight.** NVG mission training requirements are in TC 1-210, Chapter 4. Before undergoing NVG mission training, the crew member must have completed qualification or refresher training and must be NVG-current.

Flight Instruction	Hours RCM	NCM
Local area orientation*	2.0	2.0
Mission tasks	3.0	9.0
External load operations	1.0	-
Internal load operations	1.0	-
Total hours	7.0	11.0

*This is not required if accomplished during refresher training (Figure 3-2 on page 3-2).

Figure 4-1. Mission flight training guide

(1) NVG considerations for tasks (when applicable) are in Chapter 6. If the commander determines that NVG are required in mission profiles, he will develop a mission training program and specify the mission tasks.

(2) NVG mission training for newly qualified NVG RCMs consists of 15 hours of NVG flight training. On a case-by-case basis, the commander may reduce these hours to no less than 10 based on the recommendation of the IP or SP concerning the RCM's proficiency. (Any reduction in NVG mission training hours must be stated in writing by the commander and placed in the crew member's Individual Aviation Training Folder.) The commander also may approve use of the CH47FS in lieu of the aircraft for up to 5 hours if conditions preclude the use of the aircraft. During the training, the RCM must occupy a crew station with access to the flight controls. The RCM must successfully complete an NVG flight evaluation given at night in the aircraft by an NVG IP or SP. (This may be a continual evaluation.) The evaluation consists of all tasks designated by the commander. The RCM must complete NVG mission training requirements within 90 consecutive days. NVG mission training for NCMs will be per TC 1-210, Chapter 4.

(3) For NVG progression to RL 1, a crew member must have completed an NVG evaluation given at night in the aircraft by an NVG evaluator. However, the commander may designate a crew

member RL 1 for NVG purposes if a records check indicates that the crew member was previously NVG mission-qualified. The crew member also must have demonstrated proficiency in those tasks designated by the commander of the gaining unit.

4-3. MAINTENANCE TEST PILOT TRAINING

Mission training increases the RCM's proficiency in performing maintenance test flights. Chapter 7 contains the mandatory mission tasks for RCMs designated to perform maintenance test flights. The tasks will be included on the Commander's Task List in the crew member's Individual Aviation Training Folder. Commanders are not authorized to delete any MTF tasks. RCMs performing as MPs should be limited to duties in one primary and one alternate/additional aircraft and classified FAC 2. They should be required to complete only those additional mission tasks that the commander considers complementary to the MTF mission.

CHAPTER 5

CONTINUATION TRAINING

A crew member begins continuation training after he completes qualification or refresher training and any required mission training. The commander also may place the crew member in continuation training based on a records check or proficiency flight evaluation. This chapter outlines the tasks and aircraft hours that crew members must complete to support the unit's mission. It also lists those tasks that RCMs may perform in the CH47FS. TC 1-210 describes the requirements for maintaining RL 1. The required performance standards are in Chapters 6 and 7 of this ATM.

5-1. TRAINING REQUIREMENTS

a. Semiannual Flying-Hour Requirements--Aircraft. The minimum requirements are as follows:

(1) Rated crew member.

(a) FAC 1 -- 45 hours, of which all must be flown while occupying a crew station with access to the flight controls.

(b) FAC 2 -- 33 hours, of which all must be flown while occupying a crew station with access to the flight controls.

(c) FAC 3 -- no flying-hour requirements.

(d) RL 1 RCMs in NVG-designated positions and NVG PCs --9 hours of NVG flight, of which a minimum of 6 hours must be flown at night in the aircraft while occupying a crew station with access to the flight controls. The other 3 hours may be flown in the CH47FS.

NOTE: Unit trainers, evaluators, and maintenance test pilots may credit those hours they fly while performing assigned duties, regardless of their crew station, toward their semiannual flying-hour requirements.

(2) Nonrated crew member.

(a) FAC 1 -- 24 hours in the aircraft while performing crew duties.

(b) NCMs in NVG-designated positions -- 5 hours at night while performing crew duties and wearing the NVG.

b. Annual Flying-Hour Requirements--Simulation Device. RCMs may apply 12 hours of CH47FS time toward the semiannual flying-hour requirements specified in a(l)(a) and (b) above. Annual CH47FS requirements for FAC 1 and FAC 2 active duty RCMs who are within 25 SM of a CH47FS are 20 hours and 12 hours, respectively. FAC 1 and FAC 2 active duty RCMs who are not within 25 SM of a CH47FS must refer to AR 95-3. The SFTS requirements for FAC 1 and FAC 2 reserve component RCMs will be per AR 95-3. All FAC 3 RCMs, regardless of their distance from a CH47FS, will fly 10 hours semiannually in the simulator.

c. Annual Task and Iteration Requirements. The minimum requirements are as follows:

(1) One iteration of all base tasks as indicated in Figure 5-1. (Mandatory tasks to be performed are indicated by an X in the appropriate column of Figure 5-1 on pages 5-3 and 5-4.)

NOTE 1: During an evaluation, an iteration performed in a more demanding mode of flight may suffice for an iteration performed in a less demanding mode of flight. (The commander determines which mode of flight is more demanding.)

NOTE 2: The requirement to perform instrument tasks in additional aircraft, in category, will be at the discretion of the commander.

(2) One iteration of those tasks which are mandatory during NBC training as listed in paragraph 5-4.

(3) Any iterations of mission tasks listed in Figure 5-2 (page 5-5) as determined by the commander.

NOTE 1: In addition to the minimum annual tasks and iterations, RCMs assigned as maintenance officers or maintenance technicians and RCMs designated as MPs or MEs will perform a minimum of four iterations annually of the MTF tasks listed in Figure 5-3 (page 5-6). RCMs performing ME duties will perform two iterations annually of the MTF tasks while occupying each crew station.

NOTE 2: RCMs who are required to perform MP or ME duties in an additional or alternate aircraft will perform four iterations of the required tasks in each additional or alternate aircraft.

(4) Any iterations of additional tasks designated by the commander.

Task	Title	S	I	N	NVG
1000	Participate in crew mission briefing	X	X	X	X
1001[1]	Plan a VFR flight	X			
1002[1]	Plan an IFR flight		X		
1003	Prepare DD Form 365-4 (Weight and Balance Clearance Form F)				
1004[1]	Prepare DA Form 4887-R (RW Performance Planning Card)	X			
1005	Perform preflight inspection	X or	X		
1006[2]	Conduct appropriate maintenance inspection	X			
1007	Perform engine-start through before-takeoff checks	X			X
1008[2]	Perform aircraft security check	X	X	X	X
1014	Clear the aircraft and maintain airspace surveillance	X	X	X	X
1015	Perform ground taxi	X		X	
1016	Perform hover power check	X or	X	X	
1017	Perform hovering flight	X		X	X
1018	Perform VMC takeoff	X		X	X
1022	Perform traffic pattern flight				

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[1]This tasks applies to RCMs only.
[2]This tasks applies to NCMs only.
[3]Although this task applies to both RCMs and NCMs, only RCMs will be evaluated in the task.
[4]Although this task applies to both RCMs and NCMs, only NCMs will be evaluated in the task.

Legend:

S--tasks that are mandatory for standardization flight evaluation.
I--tasks that are mandatory for instrument flight evaluation.
N--tasks that must be performed during unaided night flight.
NVG--tasks that must be evaluated at night in the aircraft while the RCM is wearing the NVG.

Figure 5-1. Crew member base task list

Task	Title	S	I	N	NVG
1025[3]	Navigate by pilotage and dead reckoning	X			
1026[3]	Perform doppler/omega navigation	X		X	
1027	Perform before-landing check	X or X			
1028	Perform VMC approach	X		X	X
1029	Perform a roll-on landing	X		X	
1032	Perform slope operations	X			X
1042[4]	Perform hot/closed circuit refueling	X			
1053	Perform simulated engine failure at altitude	X or X			
1060[3]	Perform flight with AFCS off	X			X
1061	Perform cruise check procedures	X	X	X	X
1068	Perform or describe emergency procedures	X or X			X
1071	Conduct passenger briefing				
1075[3]	Perform instrument takeoff		X		
1076[3]	Perform radio navigation		X		
1077[3]	Perform holding procedures		X		
1078[3]	Perform unusual attitude recovery	X or X			
1079	Perform radio communication/ intercom procedures	X	X		
1080[1]	Perform procedures for two-way radio failure		X		
1081[3]	Perform nonprecision approach		X		
1082[3]	Perform precision approach		X		
1083[1]	Perform or describe inadvertent IMC procedures/VHIRP	X	X		X
1098	Perform after-landing tasks	X			
1099	Operate Mark XII IFF System	X			

Figure 5-1. Crew member base task list (continued)

Task	Title
2004	Perform pinnacle or ridgeline operation
2005	Perform FM radio homing
2007	Perform aerial observation
2008	Perform evasive maneuvers
2009	Perform multiaircraft operations
2013	Perform paradrop operations
2016[1,2]	Perform external load operations
2017	Perform internal load operations
2039[1]	Operate aircraft survivability equipment
2072[2]	Perform emergency procedures for actual or simulated NVG failure
2075[3]	Operate armament subsystem
2076[1,2]	Perform landing area reconnaissance
2078[2]	Perform terrain flight mission planning
2079[2]	Perform terrain flight navigation
2080[2]	Perform terrain flight takeoff
2081[1,2]	Perform terrain flight
2084[2]	Perform terrain flight approach
2086	Perform masking and unmasking
2087	Perform terrain flight deceleration
2089[3]	Perform nonrated crew duties during a maintenance test flight
2090[4]	Perform tactical communication procedures and electronic counter-countermeasures
2091	Transmit a tactical report

[1]If listed on the crew member's mission task list, this task is mandatory for standardization flight evaluations.
[2]If listed on the crew member's mission task list, this task is mandatory for NVG evaluations.
[3]This task applies to NCMs only.
[4]This task applies to RCMs only.

Figure 5-2. Crew member mission task list

Task	Title
2900	Perform prior-to-maintenance-test-flight checks
2901	Perform before-starting-engine checks
2903	Perform LCT manual operation check
2905	Perform starting engine checks
2907	Perform AFCS evaluation
2922	Perform engine run-up checks
2927	Perform AFCS function check
2929	Perform droop eliminator check
2931	Perform torque differential check
2932	Perform taxi checks
2933	Perform mechanical rig check
2934	Perform baseline and normal engine health indicator test
2935	Perform control position check
2936	Perform before-hover checks
2949	Perform speed sweep checks
2953	Perform LCT lift-off/retraction check
2954	Perform autorotation RPM check
2961	Perform self-tuning vibration absorber check
2963	Perform RRPM droop check and thrust rod slippage check
2965	Perform turbine engine analysis check
2966	Perform communication and navigation equipment checks
2967	Perform after-landing checks
2970	Perform engine shutdown check

Figure 5-3. Maintenance test pilot task list

5-2. SFTS CONSIDERATIONS

The annual flying-hour requirements are specified in paragraph 5-1b. Figure 5-4 lists the tasks that the RCM may accomplish in the CH47FS. The commander may designate additional tasks for the RCM to accomplish.

Task	Title
1001	Plan a VFR flight
1002	Plan an IFR flight
1007	Perform engine-start through before-takeoff checks
1015	Perform ground taxi
1016	Perform hover power check
1017	Perform hovering flight
1018	Perform VMC takeoff
1022	Perform traffic pattern flight
1025	Navigate by pilotage and dead reckoning
1026	Perform doppler/omega navigation
1027	Perform before-landing check
1028	Perform VMC approach
1029	Perform a roll-on landing
1053	Perform simulated engine failure at altitude
1060	Perform flight with AFCS off
1061	Perform cruise check procedures
1068	Perform or describe emergency procedures
1075	Perform instrument takeoff
1076	Perform radio navigation
1077	Perform holding procedures
1078	Perform unusual attitude recovery
1079	Perform radio communication/intercom procedures
1080	Perform procedures for two-way radio failure
1081	Perform nonprecision approach
1082	Perform precision approach
1083	Perform or describe inadvertent IMC procedures/ VHIRP
1098	Perform after-landing tasks
1099	Operate Mark XII IFF System
2004	Perform pinnacle or ridgeline operation
2005	Perform FM radio homing
2008	Perform evasive maneuvers
2009	Perform multiaircraft operations
2016	Perform external load operations
2039	Operate aircraft survivability equipment
2072*	Perform emergency procedures for actual or simulated NVG failure

*This is a mandatory NVG task.

Figure 5-4. CH47FS task list

Task	Title
2076	Perform landing area reconnaissance
2078	Perform terrain flight mission planning
2079	Perform terrain flight navigation
2080	Perform terrain flight takeoff
2081	Perform terrain flight
2084	Perform terrain flight approach
2086	Perform masking and unmasking
2087	Perform terrain flight deceleration
2090	Perform tactical communication procedures and electronic counter-countermeasures
2091	Transmit a tactical report

Figure 5-4. CH47FS task list (continued)

5-3. NVG CURRENCY REQUIREMENTS

a. Rated Crew Member.

(1) To be considered NVG current, an RCM, while occupying a crew station with access to the flight controls, must--

(a) Participate, at least once every 45 consecutive days, in a one-hour flight in a CH47FS or at night in the aircraft while wearing the NVG.

(b) Participate, at least once every 90 consecutive days, in a one-hour flight at night in the aircraft while wearing the NVG.

(2) An RCM whose currency has lapsed must complete, as a minimum, a one-hour NVG proficiency evaluation given at night in the aircraft by an NVG IP or SP. During the evaluation, the RCM must occupy a crew station with access to the flight controls. Minimum tasks to be evaluated are indicated by an X in the NVG column of Figure 5-1 (pages 5-3 and 5-4). The commander may designate other mission and/or additional tasks.

b. Nonrated Crew Member.

(1) To be considered NVG current, an NCM must participate, at least once every 60 consecutive days, in a one-hour flight at night in the aircraft while wearing the NVG and performing crew duties.

(2) An NCM whose currency has lapsed must complete a one-hour NVG proficiency evaluation given at night in the aircraft by an NVG FI or SI. Minimum tasks to be evaluated are listed below. The commander may designate other mission and/or additional tasks.

(a) Task 1014, Clear the aircraft and maintain airspace surveillance.

(b) Task 1032, Perform slope operations.

(c) Task 1061, Perform cruise check procedures.

(d) Task 2072, Perform emergency procedures for actual or simulated NVG failure.

5-4. ANNUAL NBC TRAINING REQUIREMENTS

Annual NBC training is mandatory for all FAC 1 positions and those FAC 2 positions selected by the commander. NBC training is not required for FAC 3 positions. Crew members must wear MOPP4 gear during NBC training.

a. RCMs will receive NBC training in the tasks listed below. The commander may select other tasks based on the unit's mission.

(1) Task 1005, Perform preflight inspection.

(2) Task 1007, Perform engine-start through before-takeoff checks.

(3) Task 1016, Perform hover power check.

(4) Task 1098, Perform after-landing tasks.

(5) Task 2080, Perform terrain flight takeoff.

(6) Task 2081, Perform terrain flight.

(7) Task 2084, Perform terrain flight approach.

(8) Task 2087, Perform terrain flight deceleration.

NOTE: The above tasks, with the exception of Task 1005, must be performed in the aircraft.

b. NCMs will receive NBC training in the tasks listed below. The commander may select other tasks based on the unit’s mission.

(1) Task 1005, Perform preflight inspection.

(2) Task 1007, Perform engine-start through before-takeoff checks.

(3) Task 1061, Perform cruise check.

(4) Task 1098, Perform after-landing tasks.

c. While conducting NBC training, the commander will ensure that--

(1) Aircrews use extra care when performing flight duties or training in aircraft when the wet bulb globe temperature is above 75°F.

(2) A qualified and current RCM, not wearing MOPP gear, is at one set of the flight controls at all times.

(3) Emergency procedures training is not accomplished in flight while aircrews are wearing MOPP gear. (This training will be accomplished in simulation devices or static aircraft.)

(4) NBC training is coordinated closely with the local flight surgeon.

NOTE: An additional NCM, not wearing MOPP gear, will serve as a safety monitor when other NCMs are wearing MOPP gear.

CHAPTER 6

CREW MEMBER TASKS

This chapter implements portions of STANAG 3114/Air Std 60/16.

This chapter describes those maneuvers and procedures that are essential for maintaining crew member skills. It does not contain all the maneuvers that can be performed in the aircraft. Some tasks that must be done during required training flights may not be mandatory for other flights. For example, Task 1004 is not mandatory for all flights. However, RCMs must complete the performance planning card when their training involves this task or when the instructor or evaluator requires it.

6-1. TASK CONTENTS

a. Task Number and Title. Each task is identified by a number and a title which correspond to the tasks listed in Chapter 5 (Figures 5-1 and 5-2). For ease of identification, base tasks that are to be performed by all crew members are assigned 1000-series numbers. Mission tasks that may be selected by the commander for training are assigned 2000-series numbers. Those tasks which the commander determines are essential to mission accomplishment that are not in this ATM will be designated as additional tasks and listed separately. The commander will develop conditions, standards, and descriptions for these tasks. Additional tasks will be assigned 3000-series numbers.

b. Conditions. The conditions specify the situation in which the task is to be performed. They describe the important aspects of the performance environment. All conditions must be met before task iterations can be credited.

c. Standards. The standards describe the minimum degree of proficiency or standard of performance to which the task must be accomplished.

d. Description. The description explains how the task should be done to meet the standards. It includes individual and crew-coordinated actions that are to be performed as indicated by

the P* (pilot on the controls), P (pilot not on the controls), PC (pilot in command), and CE (crew chief or flight engineer). These actions apply in all modes of flight during day, night, or NVG operations. The indications P* and P do not imply PC duties. When required, PC responsibilities are specified.

(1) Individual actions. These actions are the portions of a crew task that an individual must accomplish.

(2) Crew-coordinated actions. These portions of a task require the interaction of the entire crew to ensure safe, efficient, and effective task execution.

e. Night or NVG Considerations. Where applicable, night or NVG considerations are included.

f. References. The references listed for each task are sources of information about that particular task.

6-2. TASK CONSIDERATIONS

a. References to the IP in the task conditions include the SP.

b. References to the FI in the task conditions include the SI.

c. When a UT, an IP, or an IE is cited as a condition, that individual will be at one set of the flight controls.

d. When the CH47FS is cited as a portion of a condition, it pertains to RCMs only.

e. Unless otherwise specified in the conditions, all in-flight training and evaluations will be conducted under VMC.

f. All tasks in this chapter may be performed with the AFCS off. However, RCM proficiency and local directives must be considered when tasks are selected for performance with the AFCS off.

g. During NVG continuation training, both RCMs must be qualified and current in the aircraft and NVG. They also must wear the same type of NVG and occupy a crew station with access to the flight controls.

NOTE: An RCM who is not NVG current may perform NVG pilot duties if a qualified and current NVG IP, wearing the same type of NVG, occupies a crew station with access to the flight controls.

h. Additional crew members, wearing NVG, will supplement the crew flying the aircraft. These crew members will be positioned in the aircraft so that they can observe other aircraft in the formation and assist in maintaining aircraft separation, if applicable, and obstacle clearance.

i. For the purpose of NVG training, NVG terrain flight is defined as flight less than 200 feet AHO in the flight path.

j. Mandatory NVG evaluation tasks are listed in Chapter 5 (Figures 5-1 and 5-2). The standards for these tasks are the same as those for task performance without the use of NVG except for the airspeed and altitude limitations listed below.

(1) Wheels above trees and vegetation in the flight path -- 40 KIAS (maximum).

(2) Wheels no lower than 25 feet AHO -- 7O KIAS (maximum).

(3) Wheels no lower than 80 feet AHO -- up to Vne.

NOTE: The airspeeds shown above must be decreased if inclement weather or ambient light levels restrict visibility.

k. An infrared band-pass filter or a pink-light-modified searchlight or landing light must be operational before NVG terrain flight is conducted.

NOTE: Consult local flight regulations to obtain ambient light levels.

1. The crew will not attempt the tasks listed below if performance planning or the hover power check indicates that OGE power is not available.

(1) Task 1075, Perform instrument takeoff.

(2) Task 2004, Perform pinnacle or ridgeline operation.

(3) Task 2016, Perform external load operations.

(4) Task 2080, Perform terrain flight takeoff.

(5) Task 2081, Perform terrain flight.

(6) Task 2084, Perform terrain flight approach.

(7) Task 2086, Perform masking and unmasking.

(8) Task 2087, Perform terrain flight deceleration.

m. The emergency procedures listed below are prohibited from being performed in the aircraft except in an actual emergency. (Task 1068 discusses emergency procedures.)

(1) Touchdown autorotation.

(2) Running landing to water.

(3) AFCS off during external load hookup.

(4) Single-engine takeoff.

(5) Actual engine stoppage during takeoff or flight.

(6) Power transfer unit switches on or number 1 or number 2 hydraulic control switch on during taxiing or flight.

(7) Both engine condition levers out of flight position during taxiing or flight.

(8) Bus-tie relay disabled or gang bar placed down.

(9) APU operations during taxiing or flight.

(10) Jettison of external load.

(11) Emergency descent.

(12) Engine restart during flight.

(13) Engine shutdown with APU inoperative.

6-3. CREW COORDINATION

a. Most ATM tasks contain elements that require crew coordination. The importance of crew coordination has been reinforced by research and studies conducted by the US Army Aviation Center, US Army Safety Center, and US Army Research Institute. An analysis of rotary-wing aircraft accidents showed that a significant percentage resulted from a total lack of crew coordination in the aircraft or from crew coordination errors. Examples of the crew coordination errors identified are listed below.

(1) Failure of the P* to properly **direct assistance** from the other crew members.

(2) Failure of a crew member to **announce a decision or an action** that affected the ability of the other crew members to perform their duties properly.

(3) Failure of crew members to **communicate positively** (verbally and nonverbally).

(4) Failure of the PC to **assign crew responsibilities** properly before and during the mission.

(5) Failure of the P or other crew members to **offer assistance or information** that was needed or had been requested previously by the P*.

(6) Failure of the P* to execute flight actions in **proper sequence** with the actions of other crew members.

b. As a result of the analysis, crew coordination is defined as the crew member interaction **(communication)** and actions **(sequencing and timing)** necessary for the efficient, effective, and safe performance of tasks. The essential elements of crew coordination are explained below.

(1) Communicate positively. Good teamwork requires positive communication among crew members. Communication is positive when the sender directs, announces, requests, or offers: the receiver acknowledges; and the sender confirms, based on the receiver's acknowledgment and/or action. Crew members must use positive communication procedures for the essential crew coordination actions identified in the description of each task. They should remain aware of the potential for misunderstandings and make positive communication a habit in the aircraft. Positive communication--

(a) Is quickly and clearly understood.

(b) Permits timely actions.

(c) Makes use of a limited vocabulary of explicit terms and phrases to improve understanding in a high-ambient-noise environment.

(2) Direct assistance. A crew member will direct assistance when he cannot maintain aircraft control, position, or clearance. He also will direct assistance when he cannot properly operate or troubleshoot aircraft systems without help from the other crew members. Directives are necessary when one crew member cannot reasonably be expected to know what or when assistance is needed by the other crew members. Examples are emergencies; the P*'s decision to change the sequence, timing, or priority of the P's or CE's assistance; and a P or CE who is relatively inexperienced in the mission being flown or the flight

environment. Directives normally are not needed when the assistance required is part of a crew member's assigned responsibility in the task description.

(3) Announce actions. To ensure effective and well-coordinated actions in the aircraft, all crew members must be aware of expected aircraft movements and unexpected individual actions. Each crew member will announce any action that affects the actions of the other crew members. Such announcements are essential when the decision or action is unexpected and calls for supporting action from the other crew members to avoid a potentially hazardous situation.

(4) Offer assistance. A crew member will provide the assistance or information that has been requested. He also will offer assistance when he sees that another crew member needs help. All crew members must be aware of the flight situation and recognize when the P* deviates from normal or expected actions. They must never assume that the P* recognizes a hazard or the need for assistance.

(5) Acknowledge actions. Communications in the aircraft must include supportive feedback to ensure that crew members correctly understand announcements and directives. Acknowledgments need to be short and need to positively indicate that the message was received and understood. "Roger" or "Okay" may not be sufficient. The preferred method is to repeat critical parts of the message in the acknowledgment. Figure 6-1 shows an example of positive communication.

```
P:   "Wires, 12 o'clock."
P*:  "Wires in sight; climbing right to cross at the pole.
     Clear right and above."
CE:  "Clear right and above."
P:   "Clear left and above."
CE:  "Clear of the wires."
P*:  "Descending left."
P:   "Clear left and below."
```

Figure 6-1. Example of positive communication in the aircraft

(6) Be explicit.

(a) Crew members must avoid using terms that have multiple meanings; misinterpretations can cause confusion,

delays, or accidents. Examples are “Right,” “Back up,” and “I have it.” Crew members also must avoid using indefinite modifiers such as “Do you see that tree?” or “You are coming in a little fast." In such cases, one crew member may mistakenly assume that the other crew member’s attention is focused on the same object or event. More confusion arises when each crew member interprets the terms differently.

(b) Crew members should use clear terms and phrases and positively acknowledge critical information. During terrain flight, for example, the P must give enough information to permit the P* to fly the aircraft efficiently and safely over the intended route. He must provide navigation directions and information so that the P* does not have to concentrate on reading the instruments. Examples of acceptable navigation statements are in Figure 6-2.

Orientation to terrain feature relative to the aircraft’s current heading: "Directly ahead," "Out your right door," or "On your right side."

Terrain locator information: "The hill at your 2 o’clock position" or "Straight ahead to the pond."

Initial turning command: "Turn left" or "Turn right." When the aircraft is above NOE altitudes, a heading may be given; for example, "Turn right to 320 degrees."

Command that is always given when the P has verified that the desired heading has been achieved: "Stop turn."

Clock position associated with a specific terrain feature to prevent the P* from misinterpreting the exact heading described: "Along the tree line at 2 o’clock."

Figure 6-2. Examples of acceptable navigation statements

(7) Provide aircraft control and obstacle advisories.

(a) Although the P* is responsible for aircraft control during terrain flight, the other crew members may need to provide aircraft control information regarding airspeed, altitude, or obstacle avoidance. Because wires are difficult to see, they are a major hazard to helicopters at NOE altitudes.

Aircrews must anticipate wires along roadways; near buildings, antennas, and towers; or in combat areas where wire-guided missiles have been launched. Obstacles are even more difficult to see with the NVG. Therefore, crew members wearing NVG must consider obstacle clearance a primary task directive.

(b) Crew members should precede aircraft control and obstacle advisories by a positive command that immediately conveys the required action to the P*. A brief explanation of why the change is necessary should follow; for example, "Slow down, wires, 12 o'clock, 100 meters" or "Stop now, Wires." In some instances, the CE may notice that the P* has let the aircraft move laterally or vertically away from a sling load. The CE should precede the advisory by a positive directive; for example, "Up 2 feet, hold" or "Right 2 feet, hold." When the P* reaches the desired altitude or position, the CE should announce "Hold."

(8) Coordinate sequencing and timing. Proper sequencing and timing ensures that the actions of one crew member mesh with the actions of the other crew members. An example of properly sequenced and timed actions is in Figure 6-3.

P*	**While at a hover, announces his intent to turn right before doing so.**
P	**Focuses his attention outside the aircraft in the direction of movement to provide adequate warning of obstacles and announces "Tail clear left."**
CE	**Depending on seat assignment, announces "Tail clear left" or "Tail clear right."**
P*	**Initiates the right turn.**

Figure 6-3. Example of properly sequenced and timed actions

c. Crew coordination begins with battle rostering and training, proceeds through mission planning, and culminates in the effective execution of aircrew tasks. Research has shown that crew coordination is related to mission performance. That

research defined specific aspects of crew coordination, which include the following:

(1) Involvement of the entire crew in mission planning and rehearsal of critical mission events and contingencies.

(2) Development of standardized communication techniques, including the use of confirmation and acknowledgment.

(3) Assignment of specific task priorities and responsibilities to each crew member and individual acknowledgment of those responsibilities during the preflight crew briefing.

(4) Involvement of each crew member in monitoring the need for assistance in coping with difficult aspects of the mission.

(5) Development of positive team relationships to preclude overconfidence or subconscious intimidation because of rank or experience differences.

6-4. GENERAL CONSIDERATIONS

a. Aircrews must use the crew coordination procedures in the task descriptions during day operations so that they develop good habits that will transfer to more critical night and NVG operations.

b. When operations are conducted close to the ground or under conditions of restricted or reduced visibility, crew coordination becomes more critical.

c. The P must warn the P* anytime he detects an unexpected deviation from the intended airspeed or altitude. These deviations include aircraft drift, unusual attitude, excessive change in rate of closure, and any other unsafe condition.

d. The P must warn the P* when ground reference is marginal or is lost.

e. If the P* experiences a visual illusion or disorientation, he will inform the P and transfer the flight controls.

f. Rated crew members will follow the practice of “see and avoid” at all times. When used to describe a task condition, the term “clearing” or ”aircraft cleared” applies to all crew members. It means that they will clear the immediate area in all directions during hovering and taxi operations and left, right,

and overhead before and during takeoff. It also indicates that RCMs will use clearing turns to clear the area before climbing or descending.

g. During NVG operations, crew members will clear within the field of view. The P* will reposition the aircraft if necessary.

h. Good crew coordination requires that all crew members have a complete mental picture of the mission. This includes critical map features, flight segments and events, tactical options, emergency procedures, and operational risks. Crew members must actively participate in mission planning and rehearsal. No crew member should merely brief the other crew members on the results of an individually planned effort.

6-5. STANDARD CREW TERMINOLOGY

Crew members should use standard words and phrases to communicate with each other in the aircraft. They must keep the number of words to a minimum and use clear, concise terms that can be easily understood and complied with in an environment full of distractions. Figure 6-4 is a list of standard words and phrases with their meanings which all crew members in the unit should understand.

Abort--terminate a preplanned aircraft maneuver.
Affirmative--Yes.
Bandit--an identified enemy aircraft.
Blocking--announcement made by the crew member who intends to block the pedals.
Bogey--an unidentified aircraft assumed to be enemy.
Braking--announcement made by the crew member who intends to apply brake pressure.
Break--immediate action command to perform an emergency maneuver to deviate from the present ground track; will be followed by the word "right," "left," "up," or "down."
Call out--command by the pilot on the controls for a specified procedure to be read from the checklist by another crew member.
Cease fire--command to stop firing but continue to track.

Figure 6-4. Examples of standard words and phrases

Clear--no obstacle present to impede aircraft movement along the intended ground track. Will be preceded by the word "nose," "tail," or "aircraft" and be followed by a direction; for example, "left" or "right" or "slide left" or "slide right." Also indicates that ground personnel are authorized to approach the aircraft.
Come up/down--command to change the altitude up or down; normally used to control masking and unmasking operations.
Contact--establish communication with . . . (followed by the name of the element).
Controls--refers to the aircraft flight controls.
Drifting--an alert of the unintentional or undirected movement of the aircraft; will be followed by the word "right," "left," "backward," or "forward."
Egress--command to get out of the aircraft; repeated three times in a row.
Execute--initiate an action.
Expect--anticipate further instructions or guidance.
Fire--confirmation of illumination of the master fire warning light.
Firing--announcement that a specific weapon is to be fired.
Fly heading--command to fly an assigned compass heading. (This term generally is used in low-level or contour flight operations.)
Go ahead--proceed with your message.
Go plain--directive to discontinue secure operations.
Go secure--directive to activate secure communications.
Hold--command to maintain present position.
Inside--primary focus of attention is inside the aircraft for longer than two to three seconds.
Jettison--command for the emergency or unexpected release of an external load or stores; when followed by the word "door," will indicate the requirement to perform emergency door removal.
Maintain--command to continue or keep the same.
Mask/unmask--to conceal the aircraft by using the available terrain features and to position the aircraft above the terrain features.
Mickey--a Have Quick time-synchronized signal.
Monitor--command to maintain constant watch or observation.
Move aft--command to hover aft, followed by distance in feet.

Figure 6-4. Examples of standard words and phrases (continued)

Move forward--command to hover forward, followed by distance in feet.
Negative--incorrect or permission not granted.
Negative contact--unable to establish communication with . . . (followed by the name of the element).
No joy--target, traffic, or obstacle not positively seen or identified.
Now--indicates that an immediate action is required.
Outside--primary focus of attention is outside the aircraft.
Put me up--command to place the P*'s radio transmit selector switch to a designated position; will be followed by radio position numbers on the intercommunication panels (1, 2, 3). Tells the other crew member to place a frequency in a specific radio.
Release--command for the planned or expected release of an external load.
Report--command to notify.
Roger--message received and understood.
Say again--repeat your transmission.
Slide--intentional horizontal movement of an aircraft perpendicular to its heading; will be followed by the word "right" or "left."
Slow down--command to decrease ground speed.
Speed up--command to increase ground speed.
Stand by--wait; duties of a higher priority are being performed and the request cannot be complied with at this time.
Stop--command to go no further; halt present action.
Strobe--indicates that the aircraft AN/APR-39 has detected a radar threat; will be followed by a clock direction given by the pilot.
Tally--target, traffic, or obstacle positively seen or identified; will be followed by a repeat of the word "target," "traffic," or "obstacle" and the clock position.
Target--an alert that a ground target has been spotted.
Traffic--refers to friendly aircraft that present a potential hazard to your current route of flight; will be followed by an approximate clock position and the distance from your aircraft with a reference to altitude (high or low).
Transfer of controls--positive three-way transfer of the flight controls between the rated crew members; for example, "I have the controls," "You have the controls," and "I have the controls."

Figure 6-4. Examples of standard words and phrases (continued)

Troops on/off--command to have troops enter or exit the aircraft.
Turn--command to deviate from the present ground track; will be followed by the word "right" or "left," a specific heading in degrees, a bearing ("Turn right 30 degrees"), or instructions to follow a well-defined contour ("Follow the draw at 2 o'clock").
Unable--indicates the inability to comply with a specific instruction or request.
Up on--indicates primary radio selected; will be followed by radio position numbers on the intercommunication panels ("Up on 1, up on 3").
Weapons hot/cold/off--weapon switches are in the ARMED, SAFE, or OFF position.
Wilco--I have received your message, I understand, and I will comply.

Figure 6-4. Examples of standard words and phrases (continued)

TASK 1000

TASK: Participate in crew mission briefing.

CONDITIONS: Prior to flight in a CH-47 helicopter or a CH47FS, with all crew members present, and given DA Form 5484-R (Aircrew Mission Briefing) and a crew briefing checklist.

STANDARDS:

1. PC. Without error, brief the mission using DA Form 5484-R and a crew briefing checklist.

2. Crew Members. Verbally acknowledge an understanding of the mission briefing.

DESCRIPTION:

1. Although the PC has overall responsibility for the crew mission briefing, he may direct other crew members to perform all or part of it. The briefer will use a crew briefing checklist such as that shown in Figure 6-5. He will identify those mission and flight requirements that will place demands on effective crew coordination. The briefer will answer all pertinent questions asked by the crew members. He will not conclude the briefing until all crew members understand their assignments.

2. All crew members will direct their attention toward the crew member conducting the briefing. At the end of the briefing, the crew members will verbally acknowledge that they understand the mission requirements. If two or more NCMs will perform flight duties, the FE will brief them on their individual responsibilities.

REFERENCES:

Aircraft logbook
AR 95-1
DA Pamphlet 738-751
FM 1-400
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

CREW BRIEFING CHECKLIST

1. Crew actions, duties, and responsibilities.
   a. Transfer of controls.
   b. Emergency actions.
      (1) Engine failure (single and dual).
      (2) Fire.
      (3) Egress procedures and rendezvous point.
      (4) Injured personnel removal.
      (5) ICS failure procedure.
   c. General crew duties.
      (1) **P*.**
         (a) Fly aircraft (primary focus outside).
         (b) Avoid traffic and obstacles.
         (c) Cross-check instruments and systems.
         (d) Monitor assigned radio frequencies.
      (2) **P.**
         (a) Avoid traffic and obstacles.
         (b) Tune radios and operate doppler/omega.
         (c) Navigate.
         (d) Copy clearances and other information.
         (e) Cross-check instruments and systems.
         (f) Monitor assigned radio frequencies.
      (3) **NCM.**
         (a) Secure passengers and cargo.
         (b) Watch for traffic and obstacles.
         (c) Perform duties assigned by P*/P.
2. Required items (uniform, ID tags, publications, SOI).
3. PC's analysis of aircraft.
   a. Logbook and preflight deficiencies.
   b. Performance planning card.
   c. Mission modification based on aircraft analysis.
4. Inadvertent IMC procedures/VHIRP.
5. FARP procedures.
6. External load procedures (if applicable) per Task 2016 and unit SOP.
7. Review of critical phases of the mission and discussion of how the crew will coordinate their actions.
8. Crew members' comments, discussion, and acknowledgment of briefing.

Figure 6-5. Suggested format of a crew briefing checklist

TASK 1001

TASK: Plan a VFR flight.

CONDITIONS: Prior to VFR flight in a CH-47 helicopter or a CH47FS and given access to weather information; NOTAMs; flight planning aids; necessary charts, forms, and publications; and weight and balance information.

STANDARDS:

1. Determine if the aircrew and aircraft are capable of completing the assigned mission.

2. Determine if the flight can be performed under VFR according to AR 95-1.

3. Check applicable publications and determine, without error, if any restrictions will exist on departure, en route, and at destination.

4. Select course(s) and altitude(s) that will facilitate mission completion, and correctly compute magnetic heading(s) within ±5 degrees.

5. Determine distance ±1 nautical mile, ground speed ±5 knots, and ETE ±3 minutes for each leg of the flight.

6. Determine the fuel required from takeoff to destination, plus fuel reserve, ±100 pounds.

7. Without error, verify that the aircraft will remain within weight and CG limitations for the duration of the flight.

8. Complete and file the flight plan according to AR 95-1 and the DOD FLIP.

9. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. The PC may direct the other RCM to complete some elements of the VFR flight planning.

b. The other RCM will complete the assigned elements and report the results to the PC.

c. The PC will ensure that all crew members are current and qualified. He also will determine whether the aircraft is properly equipped to accomplish the assigned mission.

2. Procedure. Using USAF, FAA, or host-country weather facilities, obtain weather information. After determining that the flight can be completed under VFR, check NOTAMs and the Army Aviation Flight Information Bulletin for any restrictions that apply to the flight. Obtain charts that cover the entire flight route, and allow for changes in routing that may be required because of the weather or terrain. Select course(s) and altitude(s) that will facilitate mission accomplishment. Use a CPU-26A/P computer/Weems plotter (or equivalent) to plot the flight, and determine magnetic heading, ground speed, and ETE for each leg. Compute the total distance and flight time, and calculate the required fuel using the appropriate charts in TM 55-1520-240-10. Ensure that the weight and balance forms kept in the aircraft logbook apply to the aircraft load and CG limitations per AR 95-3. Verify that the aircraft weight and CG will remain within allowable limits for the entire flight. Complete a DD Form 175 (Military Flight Plan) or an equivalent form, and file the flight plan with the appropriate agency.

REFERENCES:

AR 95-1
AR 95-2
AR 95-3
AR 95-10
DOD FLIP
FAR/host-country regulations
FM 1-230
FM 1-240
FM 1-300
Local SOPS and regulations
TC 1-204
TM 55-1500-342-23
TM 55-1520-240-10

TASK 1002

TASK: Plan an IFR flight.

CONDITIONS: Prior to IFR flight in a CH-47 helicopter or a CH47FS and given access to weather information; NOTAMs; flight planning aids; necessary charts, forms, and publications; and weight and balance information.

STANDARDS:

1. Determine if the aircrew and aircraft are capable of completing the assigned mission.

2. Determine if the flight can be performed according to AR 95-1.

3. Check applicable publications and determine, without error, if any restrictions will exist on departure, en route, and at destination.

4. Select route(s) that avoid severe weather hazards, conform to known preferred routing, and are within the capability of aircraft equipment. If flying off published airways, determine the course(s) within ±5 degrees.

5. Select altitude(s) that avoid icing and turbulence, are above minimum altitudes, conform to the semicircular rule (when applicable), and do not exceed aircraft or equipment limitations.

6. Select an approach that is compatible with the weather, approach facilities, and aircraft equipment and determine if an alternate airfield is required.

7. Determine distance ±l nautical mile, true airspeed ±3 knots, ground speed ±5 knots, and ETE ±3 minutes for each leg of the flight.

8. Determine the fuel required from takeoff to destination and to the alternate airfield (if required), plus fuel reserve, ±100 pounds.

9. Without error, verify that the aircraft will remain within weight and CG limitations for the duration of the flight.

10. Complete and file the flight plan according to AR 95-1 and the DOD FLIP.

11. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. The PC may direct the other RCM to complete some elements of the IFR flight planning.

b. The other RCM will complete the assigned elements and report the results to the PC.

c. The PC will ensure that all crew members are current and qualified. He also will determine whether the aircraft is properly equipped to accomplish the assigned mission.

2. Procedure. Using USAF, FAA, or host-country weather facilities, obtain weather information. Compare destination forecast and approach minimums, and determine if an alternate airfield is required. Ensure that the flight can be completed according to AR 95-1. Check NOTAMs and the Army Aviation Flight Information Bulletin for any restrictions that apply to the flight. Obtain charts that cover the entire flight route, and allow for changes in routing or destination that may be required because of the weather. Select route(s) or course(s) and altitude(s) that will facilitate mission accomplishment. When possible, select preferred routing. Use a CPU-26A/P computer/Weems plotter (or equivalent) to plot the flight. Determine the magnetic heading, ground speed, and ETE for each leg, to include flight to the alternate airfield if required. Compute the total distance and flight time, and calculate the required fuel using the appropriate charts in TM 55-1520-240-10. Ensure that the weight and balance forms kept in the aircraft logbook apply to the aircraft load and CG limitations per AR 95-3. Verify that the aircraft weight and CG will remain within allowable limits for the entire flight. Complete a DD Form 175 (Military Flight Plan) or an equivalent form, and file the flight plan with the appropriate agency.

NOTE: Use of the doppler/omega as an IFR navigational system is not authorized; however, the crew should consider and plan for its use as an emergency backup system.

REFERENCES:

AR 95-1
AR 95-2
AR 95-3
AR 95-10
DOD FLIP
FAR/host-country regulations

FM 1-230
FM 1-240
FM 1-300
Local SOPs and regulations
TC 1-204
TM 55-1500-342-23
TM 55-1520-240-10

TASK 1003

TASK: Prepare DD Form 365-4 (Weight and Balance Clearance Form F).

CONDITIONS: Given cargo weight and dimensions, crew weights, aircraft configuration, aircraft weight and balance information, TM 55-1520-240-10, and a blank copy of the appropriate DD Form 365-4.

STANDARDS:

1. Correctly compute the takeoff gross weight and CG.

2. Correctly compute the landing gross weight and CG.

3. Determine if aircraft takeoff or landing CG or aircraft gross weight imposes limitations on the proposed flight.

4. Correctly perform crew coordination actions.

DESCRIPTION: Complete DD Form 365-4 according to the listed references. Also, verify that the aircraft weight and CG will remain within allowable limits for the entire flight.

REFERENCES:

AR 95-2
AR 95-3
TM 55-1500-342-23
TM 55-1520-240-10

TASK 1004

TASK: Prepare DA Form 4887-R (RW Performance Planning Card).

CONDITIONS: Given a completed DD Form 365-4 (Weight and Balance Form F); TM 55-1520-240-10; environmental conditions at takeoff, en route, and at destination; and a blank DA Form 4887-R.

NOTE: A blank copy of DA Form 4887-R is at the back of this training circular. Reproduce it locally on 5 1/2- by 8-inch paper or card stock.

STANDARDS:

1. Correctly compute performance planning data according to TM 55-1520-240-10 and the description below.

2. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. The PC will compute or direct the other RCM to compute the aircraft performance data according to TM 55-1520-240-10 and, where necessary, the supplemental instructions given in 3 below.

b. The PC will verify that the aircraft meets the performance requirements for the mission and will brief the other RCM on performance planning data.

c. The PC will ensure that aircraft limitations and capabilities are not exceeded.

2. Procedure.

a. DA Form 4887-R is an aid for organizing performance planning data or for handling emergency procedures that may arise during the mission. This form will be used during the APART standardization evaluation. Use the front of the form to organize departure and arrival data. Use the back of the form for fuel management, cruise, and optional data.

b. Use existing conditions to obtain the most accurate performance data. If mission or time constraints preclude using these conditions, use the highest PA and temperature forecast during the mission to determine aircraft performance other than the validation factor, predicted hover torque, and hover OGE torque.

c. Complete the items indicated by the circled numbers in Figures 6-6 and 6-7 (pages 6-30 and 6-31) according to the instructions in TM 55-1520-240-10 and, where necessary, as supplemented below. (Items not indicated by circled numbers do not pertain to the CH-47.)

3. Supplemental Instructions.

a. Departure.

(1) Items 1 and 2--PA.

(a) Departure PA. Record the PA forecast for the time of departure.

(b) Highest PA. Record the highest PA forecast during the mission profile.

(2) Items 3 and 4--FAT.

(a) Departure FAT. Record the FAT forecast for the time of departure.

(b) Highest FAT. Record the highest FAT forecast during the mission profile.

(3) Item 5--Takeoff GWT. Record the takeoff gross weight.

(4) Item 6--Load. Record the maximum anticipated weight of the load during the mission profile.

(5) Item 7--Fuel. Record the takeoff fuel weight.

(6) Item 8--Max Torque Avail (Dual Eng). Using the maximum torque available chart, record the maximum torque available for dual-engine operation.

(7) Item 9--Max Torgue Avail (Single-Eng Emergency Power). Using the single-engine emergency torque available chart, record the maximum torque available for single-engine operation.

(8) Item 10--Cont Toraue Avail (Dual Eng). Using the continuous torque available chart, record continuous torque available for dual-engine operation.

(9) Item 11--Cont Torque Avail (Single Eng). Using the continuous torque available or appropriate cruise chart, record the continuous torque available for single-engine operation.

(10) Item 12--Go/No-Go Torque(OGE/IGE) (Dual Eng). Using the hover chart, enter the chart at the maximum torque available obtained in (6) above. Move vertically to the OGE line and horizontally to the desired hover altitude. Use 10 feet for internal loads or the appropriate hover altitude for external loads (load height approximately 10 feet AGL). Then move vertically down to determine the go/no-go value.

(11) Item 13--Predicted Hover Torque (Dual Eng). Using the hover chart, record the torque required to hover at 10 feet for anticipated conditions. For external load operations, record the predicted torque required to hover at a height that will place the load approximately 10 feet AGL.

(12) Item 14--Predicted Hover Torque (Single Eng). Using the hover chart, record the torque required to hover at 10 feet for anticipated conditions. For external load operations, record the predicted torque required to hover at a height that will place the load approximately 10 feet AGL. If the power required exceeds the maximum single-engine emergency torque available, enter NA.

(13) Item 15--Hover OGE Torque (Dual Eng). Using the hover chart, record the torque required to hover OGE for anticipated conditions.

(14) Item 16--Hover OGE Torque (Single Eng). Using the hover chart, record the torque required to hover OGE for anticipated conditions. If the power required exceeds the maximum single-engine emergency torque available, enter NA.

(15) Items 17 and 18--Max Allowable GWT (OGE/IGE) (Dual Eng).

(a) OGE. Using the hover chart or the hover ceiling chart (maximum gross weight to hover), record the maximum allowable gross weight to hover OGE for dual-engine operation.

(b) IGE. Using the hover chart or the hover ceiling chart (maximum gross weight to hover) , record the maximum allowable gross weight to hover IGE for dual-engine operation.

(16) Item 19--Max Allowable GWT (OGE/IGE) (Single Eng). Using the hover chart and maximum single-engine emergency torque available ([7] above), record the maximum allowable gross

weight for single-engine operation OGE and at the appropriate hover height required for the mission.

(17) Item 20--Max R/C or Endurance IAS (Dual Eng). Using the applicable cruise chart, record the maximum rate of climb or maximum endurance indicated airspeed.

(18) Item 21--Max Range IAS (Dual Eng). Using the applicable cruise chart, record the maximum range indicated airspeed.

(19) Items 22 and 23--Sinale Eng Capability IAS (Min/Max) (Single Eng).

(a) Using the appropriate cruise chart, enter the chart at 50 percent of the computed single-engine emergency torque available. Move vertically to the first intersection of the actual gross weight line. If the torque line does not intersect the actual gross weight line, enter NA for the minimum airspeed and NA for the maximum airspeed. If the intersection is below the maximum endurance airspeed line, record the airspeed that will allow continued single-engine operation.

(b) Continue up the torque line until it intersects the actual gross weight line above the maximum endurance airspeed. Record the maximum airspeed that will allow continued single-engine operation. When the torque line is to the right of the actual gross weight line and does not intersect the actual gross weight line below the maximum endurance airspeed line, enter OGE for the minimum airspeed that will allow continued single-engine operation.

(20) Item 24--Validation Factor. Using the hover chart and anticipated conditions at the time of departure, record the predicted torque required to hover at the maximum allowable gross weight for the mission profile.

b. Arrival.

(1) Item 25--PA. Record the forecast PA at destination at ETA.

(2) Item 26--FAT. Record the forecast FAT at destination at ETA.

(3) Item 27--Landing GWT. Record the estimated landing gross weight.

(4) **Items 28 and 29--Max Allowable GWT (OGE/IGE) (Dual Eng).**

(a) OGE. Using arrival environmental conditions, record maximum allowable gross weight to hover OGE as described in a(15) (a) above. Use the torque value from (6) below.

(b) IGE. Using arrival environmental conditions, record maximum allowable gross weight to hover IGE as described in a(15) (b) above. Use the torque value from (6) below.

(5) Item 30--Max Allowable GWT (OGE/IGE) (Single Eng). Using arrival environmental conditions, the hover chart, and the maximum single-engine emergency torque available ([7] below), record the maximum allowable gross weight for single-engine operation at the estimated hover height required at destination.

(6) Item 31--Max Torque Avail (Dual Eng). Using arrival environmental conditions, record the maximum torque available as described in a(6) above.

(7) Item 32--Max Torque Avail (Single Eng). Using arrival environmental conditions, record the maximum torque available as described in a(7) above.

(8) Item 33--Hover IGE Torque (Dual Eng. Using arrival environmental conditions, record the hover IGE torque as described in a(n) above.

(9) Item 34--Hover IGE Torque (Single Eng). Using arrival environmental conditions, record the hover IGE torque as described in a(12) above.

(10) Item 35--Hover OGE Torque (Dual Eng). Using arrival environmental conditions, record the hover OGE torque as described in a(13) above.

(11) Item 36--Hover OGE Torque (Single Eng). Using arrival environmental conditions, record the hover OGE torque as described in a(14) above.

c. Fuel Management (Item 37). Use this space to record the in-flight fuel consumption check, to include fuel burnout and reserve.

d. Longitudinal Cyclic Trim.

(1) Item 38--RET Vne. Using the airspeed operating limits chart (retracted longitudinal cyclic trim), record the maximum indicated airspeed for anticipated cruise conditions.

(2) Item 39--PROG Vne. Using the airspeed operating limits chart (programmed longitudinal cyclic trim), record the maximum indicated airspeed for anticipated cruise conditions.

e. Cruise Data.

(1) Item 40--PA. Record the planned cruise PA.

(2) Item 41--FAT. Record the forecast FAT at cruise altitude.

(3) Items 42 and 43--Cruise Speed (IAS and TAS) (Dual Eng). Using the applicable cruise chart, record the indicated and true airspeeds based on gross weight and cruise data.

(4) Items 44 and 45--Cruise Speed (IAS and TAS) (Single Eng). Using the applicable cruise chart, record the indicated and true airspeeds based on gross weight and cruise data.

(5) Item 46--Cruise Torque (Dual Eng). Using the applicable cruise chart, record the torque required to maintain the airspeeds listed in (3) above.

(6) Item 47--Cruise Torque (Single Eng). Using the applicable cruise chart, record the torque required to attain the airspeeds listed in (4) above. If the chart does not show single-engine torque, double the torque value shown for dual engines.

NOTE: For items 46 and 47, adjust the cruise torque to compensate for drag caused by changes in the external configuration.

(7) Item 48--Cruise Fuel Flow (Dual Eng). Using the appropriate cruise chart, record the predicted fuel flow. Use the torque value listed in (5) above.

(8) Item 49--Cruise Fuel Flow (Single Eng). Using the single-engine fuel flow chart, record the predicted fuel flow. Use the torque value listed in (6) above.

f. Weight Commutation (Item 50). Use this area to record any additional information appropriate for the mission.

NOTE 1: Using the ceiling single-engine chart, record the maximum allowable gross weight that will allow sustained single-engine flight at the planned PA to be flown for the mission.

NOTE 2: The same PPC data will suffice for consecutive takeoffs and landings when the aircraft gross weight or environmental conditions have not increased significantly; that is, 1,000 pounds gross weight, 5°C, or 1,000 feet PA.

REFERENCES:

AR 95-1
AR 95-3
FM 1-203
TM 55-1520-240-10

RW PERFORMANCE PLANNING CARD

For use of this form, see TCs 1-209, 1-211, 1-213, 1-215, and 1-216; the proponent agency is TRADOC.

DEPARTURE

PA (1) (2)		FAT (3) (4)	
TAKEOFF GWT (5)		LOAD (6)	
CALIBRATION FACTOR		FUEL (7)	
	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX TORQUE AVAIL	(8)		(9)
CONT TORQUE AVAIL	(10)		(11)
GO/NO-GO TORQUE (OGE/IGE)	(12)		
PREDICTED HOVER TORQUE	(13)		(14)
HOVER OGE TORQUE	(15)		(16)
MAX ALLOWABLE GWT (OGE/IGE)	(17) (18)		(19)
MAX R/C OR ENDURANCE IAS	(20)		
MAX RANGE IAS	(21)		
SINGLE-ENG CAPABILITY IAS (MIN/MAX)			(22) (23)

VALIDATION FACTOR (24) _____

SAFE PEDAL MARGIN YES_____ NO_____

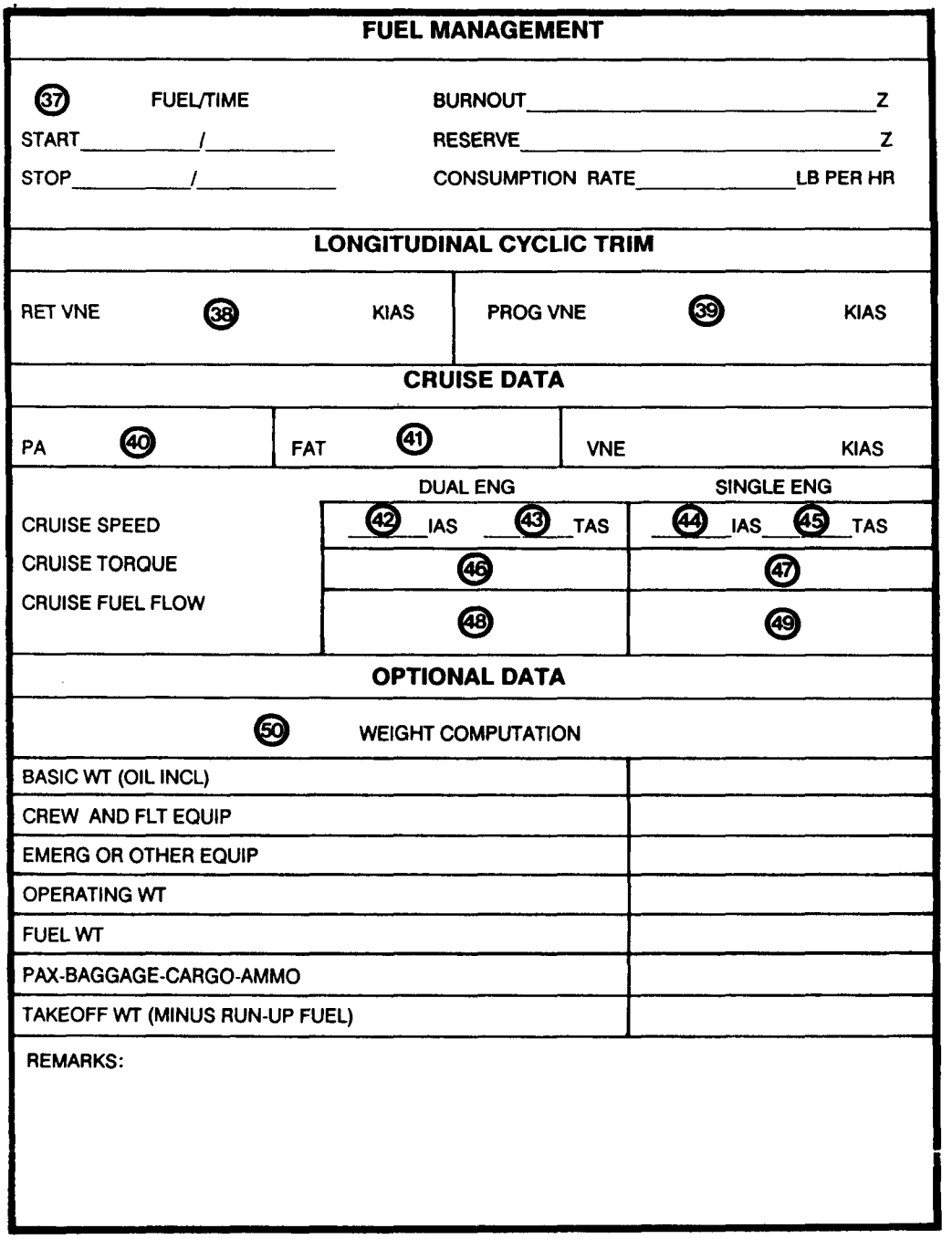
ARRIVAL

PA (25)		FAT (26)	
LANDING GWT (27)			
	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX ALLOWABLE GWT (OGE/IGE)	(28) (29)		(30)
MAX TORQUE AVAIL	(31)		(32)
HOVER IGE TORQUE	(33)		(34)
HOVER OGE TORQUE	(35)		(36)

SAFE PEDAL MARGIN YES_____ NO_____

DA FORM 4887-R, MAY 87

Figure 6-6. Sample DA Form 4887-R (front)



FUEL MANAGEMENT

(37) FUEL/TIME

START_____/_____

STOP_____/_____

BURNOUT_____Z

RESERVE_____Z

CONSUMPTION RATE_____LB PER HR

LONGITUDINAL CYCLIC TRIM

RET VNE (38) KIAS	PROG VNE (39) KIAS

CRUISE DATA

PA (40)	FAT (41)	VNE KIAS

	DUAL ENG	SINGLE ENG
CRUISE SPEED	(42) IAS (43) TAS	(44) IAS (45) TAS
CRUISE TORQUE	(46)	(47)
CRUISE FUEL FLOW	(48)	(49)

OPTIONAL DATA

(50) WEIGHT COMPUTATION

BASIC WT (OIL INCL)	
CREW AND FLT EQUIP	
EMERG OR OTHER EQUIP	
OPERATING WT	
FUEL WT	
PAX-BAGGAGE-CARGO-AMMO	
TAKEOFF WT (MINUS RUN-UP FUEL)	

REMARKS:

PAGE 2, DA FORM 4887-R, MAY 87

Figure 6-7. Sample DA Form 4887-R (back)

TASK: Perform preflight inspection.

CONDITIONS: Given a CH-47 helicopter and TMs 55-1520-240-10 and 55-1520-240-CL.

STANDARDS:

1. Rated.

a. Without error, perform the preflight inspection according to TM 55-1520-240-CL.

b. Correctly enter appropriate information on DA Form 2408-12 (Army Aviator's Flight Record) and DA Form 2408-13 (Aircraft Inspection and Maintenance Record).

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Complete all before-preflight and preflight duties according to TM 55-1520-240-CL and the unit SOP.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Before the arrival of the P*/P, the CE will ensure that the aircraft is properly serviced, special equipment is installed, entries in the aircraft logbook are current and correct, and covers and tie-downs are removed. He will secure all preloaded cargo if necessary.

2. After the arrival of the P*/P, the CE will inform him of the aircraft status, to include any special-mission equipment installed or known deficiencies.

3. The P*/P will use TM 55-1520-240-CL to verify all preflight checks. The CE will accompany the P*/P during the preflight inspection, time permitting, and answer all questions concerning aircraft components or systems based on data in the aircraft logbook and the applicable TM 55-1520-240-23. The CE will request maintenance assistance if required.

4. All crew members will enter appropriate information on DA Forms 2408-12 and 2408-13.

5. The CE will secure cowlings and equipment after completion of the preflight inspection.

NIGHT OR NVG CONSIDERATIONS: If time permits, accomplish the preflight inspection during daylight hours. During the hours of darkness, use a flashlight with an unfiltered lens to supplement available lighting. Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens. Ensure that all internal and external lights are operational.

REFERENCES:

Aircraft logbook
AR 95-1
DA Pamphlet 738-751
FM 1-400
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-23 series
TM 55-1520-240-CL
Unit SOP

TASK 1006

TASK: Conduct appropriate maintenance inspection.

CONDITIONS: Given a CH-47 helicopter and TMs 55-1520-240-PM and 55-1520-240-PMD.

STANDARDS: Correctly check all items according to TM 55-1520-240-PM or TM 55-1520-240-PMD.

DESCRIPTION: Using TM 55-1520-240-PM or TM 55-1520-240-PMD, conduct a progressive phased maintenance or preventive maintenance daily inspection. When conducting the inspection with another NCM, call out each item, in sequence, and receive a response before checking the next item. Take a fuel sample from each fuel tank, and determine if the sample contains any water or foreign matter. Correctly enter appropriate information in the aircraft logbook.

NIGHT OR NVG CONSIDERATIONS: If time permits, accomplish the maintenance inspection during daylight hours. During the hours of darkness, use a flashlight with an unfiltered lens to supplement available lighting. Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens.

REFERENCES:

Aircraft logbook
DA Pamphlet 738-751
FM 1-500
FM 10-68
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-23 series
TM 55-1520-240-CL
TM 55-1520-240-PM
TM 55-1520-240-PMD
Unit SOP

TASK 1006

TASK: Conduct appropriate maintenance inspection.

CONDITIONS: Given a CH-47 helicopter and TMs 55-1520-240-PM and 55-1520-240-PMD.

STANDARDS: Correctly check all items according to TM 55-1520-240-PM or TM 55-1520-240-PMD.

DESCRIPTION: Using TM 55-1520-240-PM or TM 55-1520-240-PMD, conduct a progressive phased maintenance or preventive maintenance daily inspection. When conducting the inspection with another NCM, call out each item, in sequence, and receive a response before checking the next item. Take a fuel sample from each fuel tank, and determine if the sample contains any water or foreign matter. Correctly enter appropriate information in the aircraft logbook.

NIGHT OR NVG CONSIDERATIONS: If time permits, accomplish the maintenance inspection during daylight hours. During the hours of darkness, use a flashlight with an unfiltered lens to supplement available lighting. Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens.

REFERENCES:

Aircraft logbook
DA Pamphlet 738-751
FM 1-500
FM 10-68
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-23 series
TM 55-1520-240-CL
TM 55-1520-240-PM
TM 55-1520-240-PMD
Unit SOP

TASK 1007

TASK: Perform engine-start through before-takeoff checks.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given TM 55-1520-240-CL.

STANDARDS:

1. Rated.

a. Without error, read the appropriate checks from TM 55-1520-240-CL and confirm the crew member's response.

b. Without error, respond to all applicable checklist items when read by the P.

c. Without error, make the appropriate checks outlined in TM 55-1520-240-CL.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Without error, respond to all applicable checklist items when read by the P.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will read the appropriate checks in the correct sequence according to TM 55-1520-240-CL. All crew members will respond, as appropriate, to the checklist items read by the P.

2. The P* will remain focused outside the aircraft unless required to make an operational check.

3. During engine start, the CE will assume a position 45 degrees from the front of the engine to ensure that the aircraft is clear and ready for the engine start.

WARNING

Anytime a crew member is outside the aircraft while the engines are operating, the crew member's visor should be down.

4. During the aircraft HIT check, the P will use information from the aircraft HIT check log. He will adjust RRPM and thrust to obtain the correct N1 value. The CE will record the required data for the HIT check in the HIT check log.

5. The P* may make the before-takeoff checks from memory. The P will use TM 55-1520-240-CL to verify them. The CE will ensure that passengers, mission equipment, and cargo are prepared for takeoff.

NOTE: If two or more NCMs will perform flight duties, the FE will determine which crew member will perform specific portions of each task.

NIGHT OR NVG CONSIDERATIONS: Aircraft lighting levels must be high enough so the RCMs can see the instruments easily and avoid exceeding aircraft operating limitations.

REFERENCES:

AR 95-1
Engine HIT check log
FM 1-301
TC 1-201
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK 1008

TASK: Perform aircraft security check.

CONDITIONS: Given a CH-47 helicopter.

STANDARDS: Properly secure the aircraft after the last flight of the day per TM 55-1520-240-10, the applicable TM 55-1520-240-23, and the unit SOP.

DESCRIPTION: Check that the aircraft is properly moored and that protective covers and security devices are properly installed per TM 55-1520-240-10, the applicable TM 55-1520-240-23, and the unit SOP. Perform any additional security duties directed by the PC or outlined in the unit SOP.

REFERENCES:

AR 190-11
AR 190-51
FM 1-500
TM 55-1520-240-10
TM 55-1520-240-23 series
Unit SOP

TASK 1015

TASK: Perform ground taxi.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given TM 55-1520-240-CL.

STANDARDS:

1. **Rated.**

a. Correctly call for and perform the before-taxi check per TM 55-1520-240-CL.

b. Properly clear the aircraft.

c. Correctly call for and perform the taxi check per TM 55-1520-240-CL.

d. Properly monitor flight controls and LCT operation.

e. Maintain a constant speed appropriate for conditions and stay within ground control limitations.

f. Maintain desired ground track.

g. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Without error, perform applicable checks according to TM 55-1520-240-CL and the unit SOP when read by the P.

b. Immediately inform the RCMs of any observed discrepancy or malfunction.

c. Properly clear the aircraft.

d. Correctly use hand-and-arm signals, if required, per FM 21-60.

e. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Two-Wheel Taxi.**

a. The P* will announce his intent to begin the two-wheel taxi, state his taxi plan, and clear the aircraft. The P and CE will assist him in clearing the aircraft.

b. The P* will call for the before-taxi check or the taxi check, as appropriate. The P will read the appropriate taxi check. He will ensure that the aft wheel swivels are locked and that the AFCS select switch is at BOTH.

c. The P* will advise the P to monitor ground control limitations and LCT operation. The P* will position the cyclic, as necessary, not to exceed 2 inches aft. He will release the brakes, as required, and raise the thrust control until the forward gear is clear of the ground. The P* will maintain directional control with the pedals and speed with the thrust control.

(1) During forward taxi, the P* will raise the thrust control to slow or stop the aircraft. He will lower it to increase forward speed. If desired, the P* will lower the forward gear to the ground while taxiing in a straight line or when all movement is stopped.

(2) For rearward taxi, the P* will raise the thrust control until the aircraft begins to move rearward. He will maintain directional control with the pedals and speed with the thrust control. The P* will lower the thrust control to slow or stop the aircraft. He will raise the thrust control to increase rearward speed.

CAUTION

While turning during a two-wheel taxi, the P* must not allow the forward gear to contact the ground.

NOTE: The P* may use lateral cyclic inputs to assist with directional control. These inputs normally are required while taxiing in a crosswind.

2. Four-Wheel Taxi.

a. The P* will announce his intent to begin the four-wheel taxi and state his taxi plan. He will call for the before-taxi check or the taxi check, as appropriate. The P will read the appropriate taxi check. He will ensure that the swivel switch is at STEER and that the AFCS select switch is off.

b. The P will advise the P* that he has control of the brakes. The P* will monitor LCT operation and take care to not exceed ground control limitations.

c. All crew members will clear the aircraft as necessary. The p* will raise the thrust control, as necessary, to start forward movement and then lower it to ground detent.

(1) The P will maintain the taxi speed with moderate brake applications.

(2) The P will slowly rotate the power steering control knob to turn the aircraft in the desired direction. During taxi at light gross weights, the P may have to advise the P* to apply aft cyclic to prevent a loss of steering control.

NOTE: During four-wheel taxi, the P must not allow the power steering control knob to spring back to the neutral position.

d. When the CE is required outside the aircraft during taxiing, he will position himself where the P*/P can clearly see his hand-and-arm signals or will remain attached to the aircraft communication system.

NOTE: If the LCT actuators cycle between RET and GND because of light loading on the aft landing gear, it may be necessary to apply up to 2 inches of aft cyclic. If this action does not prevent further LCT cycling, set the cyclic trim switch to MANUAL. If the LCTs are not at GND, manually set them to that position. When taxiing is completed and prior to hover, set the cyclic trim switch to AUTO.

REFERENCES:

FM 21-60
TC 1-201
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK 1016

TASK: Perform hover power check.

CONDITIONS: In a CH-47 helicopter or a CH47FS with performance planning information available and the before-hover check completed.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Perform the hover power check when near the takeoff point and in the direction of takeoff.

   c. Maintain a stationary hover ±3 feet, do not allow drift to exceed ±5 feet, and maintain heading control ±10 degrees.

   d. Correctly note and record torque, engine Nls, PTITs, and engine oil pressures and determine if sufficient fuel is available to complete the mission.

   e. Without error, determine that sufficient power is available to complete the mission by comparing actual torque to predicted torque, go/no-go torque, and the validation factor obtained during performance planning.

   f. Determine if single-engine capability exists.

   g. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. When near the intended takeoff point and in the direction of takeoff, the crew will clear left, right, rearward, and overhead. The P* will then bring the aircraft to a stationary hover. The P will determine if single-engine capability exists and will compare actual torque to predicted torque, go/no-go torque, and the validation factor. He will ensure that aircraft limitations are not exceeded. The P will note and record actual torque,

engine Nls, PTITs, and engine oil pressures. The PC will ensure that aircraft performance and fuel are sufficient to complete the mission.

NOTE: If the torque required to maintain a stationary hover does not exceed the go/no-go torque value, any maneuver requiring OGE power or less may be attempted. If the torque required to maintain a stationary hover exceeds the go/no-go torque value but does not exceed the validation factor, only IGE maneuvers may be attempted. If the torque required to hover exceeds the computed validation factor, the maximum gross weight may have been exceeded.

2. Anytime the gross weight or environmental conditions increase significantly, the crew should perform additional hover power checks and, if necessary, recompute all values. Significant increases are defined as 1,000 pounds gross weight, 5°C, and 1,000 feet PA.

NIGHT OR NVG CONSIDERATIONS: The crew must use proper scanning techniques to avoid excessive drift when hovering at night or using NVG.

REFERENCES:

TC 1-204
TM 55-1520-240-10

TASK 1017

TASK: Perform hovering flight.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the before-hover check completed.

STANDARDS:

1. **Rated.**

   a. **Takeoff to a hover.**

      (1) Properly clear the aircraft.

      (2) Establish a vertical ascent to a hover altitude ±3 feet.

      (3) Maintain heading ±10 degrees.

      (4) Do not exceed ground control limitations.

   b. **Hovering flight.**

      (1) Maintain altitude ±3 feet.

      (2) Maintain heading ±10 degrees.

      (3) Do not allow drift to exceed 5 feet.

   c. **Forward, sideward. or rearward.**

      (1) Maintain altitude ±3 feet.

      (2) Maintain heading ±10 degrees.

      (3) Maintain a constant hover speed for conditions.

      (4) Maintain ground track.

   d. **Hovering turns.**

      (1) Maintain altitude ±3 feet.

      (2) Do not allow drift to exceed 5 feet from the pivot point.

      (3) Maintain a constant rate of turn not to exceed 90 degrees of turn in four seconds.

e. Landing from a hover.

(1) Execute a smooth, controlled vertical descent with minimum drift at touchdown.

(2) Maintain heading ±10 degrees.

(3) Do not exceed ground control limitations.

f. Crew Coordination. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly clear the aircraft.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. The P* will announce his intent to perform a specific hovering flight maneuver. He will focus his attention primarily outside the aircraft but will occasionally cross-check the flight instruments to help maintain a stabilized hover.

b. All crew members will assist in clearing the aircraft in the direction of any movement. They will provide adequate warning of obstacles, excessive drift, or excessive altitude changes.

2. Procedures.

a. Takeoff to a hover. Position the cyclic, as necessary, not to exceed 2 inches aft and maintain heading with the pedals. Smoothly raise the thrust control and adjust the cyclic to make a vertical ascent. Then release the brakes as necessary.

b. Hovering flight. Adjust the cyclic to maintain a stationary hover or to hover in the desired direction. Control heading with the pedals and maintain altitude with the thrust control. Maintain a constant hover speed appropriate for the conditions. To return to a stationary hover, apply cyclic in the opposite direction while maintaining heading with the pedals and altitude with the thrust control.

c. Hovering turns.

(1) Around the nose. With the aircraft stationary, pick a point slightly forward of the nose. Control the direction and rate of turn with the cyclic and pedals and maintain altitude with the thrust control. (Cross-control of the cyclic and pedals is required to pivot around the nose.)

(2) Around the center cargo hook. With the aircraft at a stationary hover and the cargo hook over the pivot point, apply pedal in the desired direction of turn. Maintain a stationary position over the pivot point with the cyclic. Control the rate of turn with the pedals and maintain altitude with the thrust control.

(3) Around the tail. With the aircraft at a stationary hover and the pivot point under the tail, apply cyclic and pedal in the direction of the intended turn. Use cyclic and pedal to control the rate of turn and movement. Maintain hover altitude with the thrust control.

d. Landing from a hover. Lower the thrust control to effect a smooth rate of descent until the aft gear contacts the ground. Coordinate thrust control reduction with the aft cyclic, as necessary, to maintain pitch attitude and to stop forward movement. Smoothly lower the thrust control to allow the forward gear to contact the ground. Continue to lower the thrust control to ground detent, neutralize the controls, and apply brakes to stop forward movement.

NOTE 1: The P should assist the P* in maintaining the position of the aircraft over the pivot point.

NOTE 2: When landing from a hover to an unimproved area, the crew must check for obstacles under the aircraft.

NOTE 3: After landing, the P*/P must ensure that the LCT indicators are at GND and that the ground contact lights are illuminated, if applicable.

NIGHT OR NVG CONSIDERATIONS: If the P* becomes disoriented, he should apply sufficient power and execute a takeoff. If a takeoff is not feasible, the P* should attempt to maneuver the aircraft forward and down to the ground to limit the possibility of touchdown with sideward or rearward movement.

REFERENCES:

FM 1-203
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 1018

TASK: Perform VMC takeoff.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the hover power and before-takeoff checks completed.

STANDARDS:

1. **Rated.**

a. Properly clear the aircraft.

b. Initiate the takeoff from an appropriate hover ±3 feet.

c. Maintain takeoff heading ±10 degrees below 50 feet AGL.

d. Maintain ground track alignment with the takeoff direction.

e. Maintain the aircraft in trim above 50 feet AGL.

f. Accelerate to the desired airspeed ±10 knots.

g. Maintain the desired rate of climb ±100 FPM.

h. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Check that the crew, passengers, cargo, and mission equipment are properly secured.

b. Properly clear the aircraft.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. **From the ground.**

a. The P* will announce his intent to take off from the ground. He will focus his attention primarily outside the aircraft but will occasionally cross-check the flight instruments.

b. All crew members will clear the aircraft.

c. The P* will select reference points to maintain ground track. With the cyclic and pedals in the neutral position, the P* will release the brakes and raise the thrust control until the aircraft is airborne and accelerating. All landing gear should leave the ground at the same time. As the aircraft leaves the ground, the P* will apply forward cyclic as required to smoothly accelerate through ETL at an altitude appropriate for the terrain and obstacles. He will adjust the cyclic as necessary to continue the acceleration, obtain the desired climb airspeed, and maintain ground track. The P* will position the thrust control as necessary to clear obstacles in the flight path and obtain the desired rate of climb. He will use the pedals to maintain heading when below 50 feet AGL and in trim and aligned with the ground track when above 50 feet AGL. When the P* obtains the desired climb airspeed, he will adjust the cyclic as necessary to stop the acceleration. He will adjust the thrust control to continue or to stop the rate of climb. The P will confirm LCT operation as the aircraft passes through 70 KIAS.

2. <u>From a Hover.</u>

a. The P* will announce his intent to take off from a hover. He will focus his attention primarily outside the aircraft.

b. All crew members will clear the aircraft.

c. The P* will select reference points to maintain ground track. He will apply forward cyclic to smoothly accelerate the aircraft through ETL while adjusting the thrust control, as required, to maintain the appropriate hover height. The P* will perform the rest of the maneuver as for a takeoff from the ground.

NOTE 1: The P* must avoid unnecessary nose-low accelerative attitudes.

NOTE 2: For training, a climb airspeed of 70 knots and a rate of climb of 500 FPM are recommended.

NOTE 3: The NCMs should remain seated during this maneuver.

NIGHT OR NVG CONSIDERATIONS:

1. If sufficient illumination exists to view obstacles, the p* can accomplish the takeoff at night in the same way he does a VMC takeoff during the day. If sufficient illumination does not exist to view obstacles, he should perform an altitude-over-airspeed takeoff until the aircraft passes through an altitude that will ensure obstacle clearance.

2. If the P* uses more than hover power for the takeoff, he will maintain that power setting until approximately 10 knots prior to reaching climb airspeed. He will then adjust power as required to establish the desired rate of climb. The P should constantly cross-check the flight instruments. He will advise the P* when the altimeter and VSI show that a climb has been established.

3. Reduced visual references during the takeoff and throughout the ascent at night may make it difficult for the P* to maintain the desired ground track. The P* should know the surface wind direction and velocity. This will assist him in estimating the appropriate crab angle required to maintain the desired ground track.

REFERENCES:

FM 1-202
FM 1-203
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 1022

TASK: Perform traffic pattern flight.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given altitudes, airspeeds, traffic pattern headings, and ground reference points.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Maintain rate of climb or descent 3100 FPM.

   c. Maintain the aircraft in trim.

   d. Maintain airspeed ±10 KIAS.

   e. Maintain altitude ±100 feet.

   f. Maintain ground track alignment parallel to the downwind leg and perpendicular to the base leg.

   g. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will continually clear the aircraft. The P* will maneuver the aircraft into position to enter the downwind leg midfield at a 45-degree angle (or as locally prescribed), at traffic pattern altitude, and at the proper airspeed. The P* may use a straight-in or base leg entry if approved by ATC. Prior to turning base, the P* will reduce power as necessary to initiate a descent if required. If performing a straight-in or base leg entry, he will reduce airspeed at a point comparable to that for a normal approach. The P* will turn base and final legs, as appropriate, to maintain the desired ground track. He will then execute the desired approach.

2. For a closed traffic pattern after takeoff, the P* will climb straight ahead to the appropriate altitude, turn to crosswind, and continue the climb as necessary. He will initiate the turn to downwind, as required, to maintain the desired ground

track. The P* will adjust the cyclic and thrust control, as required, to maintain traffic pattern altitude, airspeed, and ground track.

NOTE: During training, the recommended airspeed is 70 KIAS on crosswind and base legs and 100 KIAS on the downwind leg.

NIGHT OR NVG CONSIDERATIONS:

1. During periods of reduced illumination or marginal weather, the P* may reduce the recommended airspeeds.

2. The P* should maintain orientation regarding the location of the landing area and concentrate on obstacle avoidance. The P should make all necessary checks.

REFERENCES:

DOD FLIP
FM 1-203
TC 1-204
TM 55-1520-240-10
Unit SOP

TASK 1025

TASK: Navigate by pilotage and dead reckoning.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given a plotter, a computer, the flight log, and appropriate maps.

STANDARDS:

1. **Rated.**

   a. Maintain orientation within 500 meters.

   b. When the actual ground speed differs from the planned ground speed, adjust airspeed to arrive at checkpoints ±3 minutes of ETA.

   c. Properly clear the aircraft.

   d. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. After obtaining the current weather forecast, the P*/P will plan the flight by marking the route and appropriate checkpoints. He will compute the time, distance, and heading for each leg of the flight route.

2. The P* will fly the assigned headings and adjust airspeed when directed by the P. He will advise the P when the aircraft overflies the checkpoints and will announce significant terrain features to assist in navigation.

3. During the flight, the P will use pilotage and dead reckoning to determine the position of the aircraft. He will perform a ground speed check as soon as possible by computing the actual time required to fly a known distance. The P will adjust estimated times for subsequent legs of the flight route using actual ground speed. He will advise the P* to adjust headings to reflect wind drift corrections for the remaining legs of the flight. The P* will make heading corrections to maintain the desired course (ground track).

4. The CE will continually watch for traffic and obstacles along the flight path.

NIGHT OR NVG CONSIDERATIONS: TC 1-204 contains details on night navigation and mission planning.

REFERENCES:

Aeronautical charts
FM 1-240
TC 1-201
TC 1-204

TASK 1026

TASK: Perform doppler/omega navigation.

CONDITIONS: In a CH-47 helicopter or a CH47FS.

STANDARDS:

1. **Rated.**

a. Correctly operate the doppler/omega according to TM 55-1520-240-10.

b. Correctly use the HSI with the doppler/omega.

c. Correctly maintain ground track.

d. Correctly determine the position of the aircraft along the flight route.

e. Correctly perform doppler/omega update procedures.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly clear the aircraft.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will perform doppler/omega turn-on, test, and programming procedures. He will use the HSI with the doppler/omega when flying the selected course.

2. The P will determine the position of the aircraft along the flight route using doppler/omega information. He will perform doppler/omega update procedures per TM 55-1520-240-10.

NOTE: Use of the doppler/omega as an IFR navigational system is not authorized; however, the crew should consider and plan for its use as an emergency backup system.

REFERENCES:

FM 1-203
FM 1-240
Local SOP
TC 1-201
TC 1-204
TM 11-5841-281-12
TM 55-1520-240-10

TASK: Perform before-landing check.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given TM 55-1520-240-CL.

STANDARDS:

1. Rated.

a. Without error, call for or perform, as necessary, the before-landing check per TM 55-1520-240-CL.

b. Correctly perform crew coordination actions.

2. Nonrated.

a. Without error, perform appropriate checks per TM 55-1520-240-CL when read by the P.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Prior to initiating an approach for landing, the P* will call for or perform the before-landing check.

2. The P will use TM 55-1520-240-CL to make the appropriate checks and verify the appropriate responses in the correct sequence. He will verify any before-landing checks performed by the P*.

3. The CE will perform appropriate checks when read by the P and respond when he completes each check.

REFERENCES:

AR 95-1
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 1028

TASK: Perform VMC approach.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the before-landing check completed.

STANDARDS:

1. **Rated.**

a. Select a suitable landing area.

b. Establish entry airspeed ±10 KIAS.

c. Maintain a constant approach angle to clear obstacles.

d. Maintain ground track alignment with the landing direction.

e. Maintain an apparent rate of closure, not to exceed the speed of a brisk walk.

f. Execute a smooth, controlled termination to a hover or to the ground.

g. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Check that the crew, passengers, cargo, and mission equipment are properly secured.

b. Properly clear the aircraft.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.**

a. The P* will focus his attention primarily outside the aircraft to ensure obstacle clearance throughout the approach and landing. He will announce when he begins the approach and whether he will terminate the approach to a hover or to the ground. The P* also will announce the intended point of landing and any deviation from the approach, to include a go-around if necessary.

b. The P and CE will confirm the suitability of the landing area if requested. They will assist the P* in clearing the aircraft and warn him of any traffic or obstacles. The P will confirm that the LCTs retract during the approach. If a go-around is necessary, the P and CE will remain focused outside the aircraft for obstacle avoidance. The P* will acknowledge any pertinent observations made during the approach. The P will announce when he is focused inside the aircraft to monitor instruments and respond to system malfunctions.

2. Procedures.

a. To a hover. Determine an approach angle that allows safe clearance of obstacles while descending to the intended point of landing. Once the approach angle is intercepted (on base or final), adjust the thrust control as necessary to establish and maintain the angle. Maintain the entry airspeed until the apparent ground speed and rate of closure appear to be increasing. Progressively decrease the rate of descent and rate of closure until an appropriate hover is established over the intended termination point. Maintain ground track alignment with the landing direction by maintaining the aircraft in trim when above 50 feet AGL. Align the aircraft with the landing direction when below 50 feet AGL.

CAUTION

To prevent droop-stop pounding, do not exceed ground control limitations after the landing gear contacts the ground.

b. To the around. Proceed as for an approach to a hover, except continue the descent to the ground. Make the touchdown with minimum forward or lateral movement. After ground contact, ensure that the aircraft remains stable with all movement stopped. Smoothly lower the thrust control to ground detent and neutralize the pedals and cyclic. Apply brakes if required.

NIGHT OR NVG CONSIDERATIONS:

1. Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. After establishing the descent, the P* should reduce airspeed to approximately 50 KIAS. He should maintain airspeed until the apparent ground speed and rate of closure appear to be increasing. The rate of descent at night during the final 100 feet should be slightly slower than during

the day to avoid abrupt attitude changes at low altitudes. The P* should progressively decrease the rate of descent and forward speed until he terminates the maneuver.

2. The crew must be aware that the surrounding terrain or vegetation may decrease contrast and degrade depth perception during the approach to the landing area. Before descending below obstacles in the flight path, the P* must determine the need for artificial lighting.

3. The P will monitor the flight instruments to ensure that aircraft limitations are not exceeded.

REFERENCES:

FM 1-202
FM 1-203
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL

TASK: Perform a roll-on landing.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the before-landing check completed.

STANDARDS:

1. **Rated.**

a. Properly clear the aircraft.

b. Establish entry altitude 3100 feet.

c. Establish entry airspeed 70 KIAS, ±10 KIAS.

d. Maintain a constant approach angle.

e. Maintain RRPM as required during the approach.

f. Maintain ground track alignment with the landing direction.

g. Execute a smooth, controlled touchdown at or above ETL but not exceeding 60 knots of ground speed or a 20-degree, nose-high pitch attitude.

h. Do not exceed ground control limitations after touchdown.

i. Maintain runway alignment 35 degrees.

j. Execute a smooth, controlled rollout.

k. Correctly perform crew coordination actions.

2. **Nonrated**

a. Properly clear the aircraft.

b. Check that the crew, passengers, cargo, and mission equipment are properly secured.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. Before starting the approach, the P will verify that the brakes are released and that the swivels are locked. When the

desired approach angle is intercepted, the P* will lower the thrust control as required to establish the descent. The P will assist the P* as necessary with maintaining RRPM during the approach. The P* will maintain entry airspeed until reaching approximately 100 feet AGL or a point from which the obstacles can be cleared. He will then assume a decelerating attitude (approximately 10 to 15 degrees, nose high) to effect a touchdown on the aft landing gear. The CE will inform the P* when the rear of the aircraft is clear of all obstacles in the flight path. The P* will slip the aircraft during the deceleration to achieve runway alignment upon touchdown. The P will check that the LCTs retract during the deceleration. The P* will maintain the desired angle of descent with the thrust control. Prior to touchdown, he will adjust the thrust control to effect a smooth touchdown on the aft landing gear before going below ETL.

2. After landing, the P* will maintain the landing attitude with the cyclic and thrust control (not to exceed 20 degrees, nose high) until forward speed is sufficiently slowed or stopped. The P will monitor ground control limitations to ensure that they are not exceeded. The P* will smoothly lower the thrust control until the forward landing gear contacts the ground. He will then neutralize the flight controls and apply brakes as necessary to stop forward movement.

NIGHT OR NVG CONSIDERATIONS: Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. After establishing the descent, the P* should reduce airspeed to approximately 70 KIAS. He should maintain airspeed until the apparent ground speed and rate of closure appear to be increasing. The rate of descent at night during the final 100 feet should be slightly slower than during the day to avoid abrupt attitude changes at low altitudes. The P* should progressively decrease the rate of descent and forward speed until he terminates the maneuver.

REFERENCES:

FM 1-203
TM 55-1520-240-10

TASK: Perform slope operations.

CONDITIONS: In a CH-47 helicopter.

STANDARDS:

1. **Rated.**

   a. Set the parking brakes prior to landing.

   b. Properly clear the aircraft.

   c. Maintain heading upslope, downslope, or cross slope ±5 degrees.

   d. Ensure minimum drift prior to and no drift after wheel contact with the ground.

   e. Execute a smooth, controlled descent and touchdown.

   f. Execute a smooth, controlled ascent.

   g. Remain within ground control limitations, and ensure that the aircraft does not encounter droop-stop pounding.

   h. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft throughout the landing sequence.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.**

   a. The P* will announce his intent to perform a slope operation and will establish the aircraft over the slope. He will set the brakes, requesting assistance if needed. The P* will remain within ground control limitations.

   b. If requested by the P*, the P will assist in setting the brakes. All crew members will clear the aircraft and provide warning of obstacles, excessive drift, or excessive attitude changes.

c. The CE will assume a position where he can observe the slope operation. He will clear his sector while checking that the rotor blades are clear of obstacles and the ground. If requested, the CE will call out wheel height from 10 feet in l-foot increments until the landing gear contacts the ground. He will advise the P* when all landing gear are on the ground.

2. Procedures.

a. Upslope landings. With the aircraft heading upslope, the P* will lower the thrust control until the forward landing gear contacts the ground. He will maintain heading with the pedals and adjust cyclic as necessary to maintain the position of the aircraft. The P* will continue to lower the thrust control until the aft landing gear contacts the ground. When all landing gear are on the ground, he will smoothly lower the thrust control to ground detent. The P* will then neutralize the controls while checking the stability of the aircraft. He will perform the takeoff from the upslope in the reverse sequence.

b. Downslope landings. With the aircraft heading downslope, the P* will lower the thrust control until the aft landing gear contacts the ground. He will adjust pitch attitude to maintain a stabilized position on the slope by coordinating thrust reduction with aft cyclic movement (not to exceed 2 inches aft). This may result in a slightly higher pitch attitude when the LCTs program to ground detent. The P* will maintain heading with the pedals. He will smoothly and continuously lower the thrust control until the forward landing gear contacts the ground. If the aircraft slides down the slope, the P* will bring it back to a hover and reposition it. When all landing gear are on the ground, he will smoothly lower the thrust control to ground detent. The P* will then neutralize the controls while checking the stability of the aircraft. He will perform the takeoff from the downslope in the reverse sequence.

NOTE: The LCT will program to ground detent as soon as the aft landing gear contacts the ground. This may cause the aircraft to accelerate forward. To prevent this acceleration, the P* may place the AFCS cyclic trim switch to MANUAL and extend the actuators to GND before conducting slope operations. After departing the slope, the P* will return the AFCS cyclic trim switch to AUTO.

c. Cross-slope landings. With the aircraft heading cross slope,the P* will lower the thrust control until the upslope aft landing gear contacts the ground. He will maintain heading with the cyclic and pedals as required without exceeding ground control limitations. The P* will maintain pitch attitude by coordinating thrust control reduction with aft cyclic

movement, not to exceed 2 inches aft. This will normally place the downslope aft landing gear in contact with the ground. The P* will coordinate the cyclic and pedals as necessary. He will continue to lower the thrust control until the forward landing gear is on the ground. The P* will smoothly lower the thrust control to ground detent and neutralize the controls while checking the stability of the aircraft. He will perform the takeoff from the cross slope in the reverse sequence.

NOTE 1: Before conducting slope operations, RCMs must understand droop-stop characteristics.

NOTE 2: If at any time successful completion of the landing is doubtful, the P* must abort the maneuver.

NIGHT OR NVG CONSIDERATIONS: When conducting slope operations, the crew should select reference points to determine slope angles. References will probably be limited and difficult to ascertain.

REFERENCES:

FM 1-203
TC 1-204
TM 55-1520-240-10

TASK 1042

TASK: Perform hot\closed circuit refueling.

CONDITIONS: Given a CH-47 helicopter and aircraft refueling equipment or orally in a classroom environment.

STANDARDS:

1. **Rated.**

a. Taxi into the refueling point per Task 1015 or Task 1017.

b. Accomplish the refueling per TM 55-1520-240-CL and the unit SOP.

c. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Ensure that safety procedures are complied with per FM 10-68 and TM 55-1520-240-10.

b. Accomplish the aircraft refueling per FM 10-68, TM 55-1520-240-10, and the unit SOP.

c. Properly enter appropriate information on DA Form 2408-13 (Aircraft Inspection and Maintenance Record).

d. Correctly perform crew coordination actions.

WARNING

Weapon systems must be cleared and SAFE before the aircraft is refueled.

DESCRIPTION:

1. **Before Refueling.** The P*/P will taxi into the refueling Point. The CE will assist the P*/P in Positioning the aircraft. the crew will ensure that proper separation is maintained between the fuel source, the aircraft, and the refueling equipment. The

CE will verify that all personnel who are not involved with the refueling operation leave the aircraft and remain a safe distance away.

2. During Refueling. The P*\P will ensure that the aircraft is refueled per FM 10-68, TM 55-1520-240-10, and the unit SOP. The CE will refuel the aircraft or monitor the refueling procedure if a ground crew refuels the aircraft. He will maintain communication with the PC, making frequent reports on the progress of the refueling procedure. The CE will check that all tanks are filled to the required level.

3. After Refueling. The CE will inform the PC when the refueling is completed,check that all caps are secured, and remove the grounding cable from the aircraft. He will assist passengers in boarding the aircraft and securing their seat belts. The CE will assist the P*\P in clearing the aircraft during the departure from the refueling area. He will then make appropriate entries on DA Form 2408-13.

NIGHT OR NVG CONSIDERATIONS: At night, use a flashlight with an unfiltered lens to check for leaks and fuel venting.

REFERENCES:

AR 95-3
DA Pamphlet 738-751
FM 1-104
FM 1-500
FM 10-68
FM 21-60
Task 1015
Task 1017
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK 1053

TASK: Perform simulated engine failure at altitude.

CONDITIONS: In a CH-47 helicopter with an IP/IE at one set of the flight controls or in a CH47FS.

STANDARDS:

1. Rated.

a. Correctly identify the emergency, determine the appropriate corrective action, and perform, from memory, all immediate action procedures described in TM 55-1520-240-CL.

b. If time permits, verify that the emergency procedure has been correctly accomplished per TM 55-1520-240-CL.

c. Correctly perform crew coordination actions.

2. Nonrated. Correctly perform crew coordination actions.

DESCRIPTION: Upon detecting engine failure, the P* will evaluate the emergency and respond according to procedures in TM 55-1520-240-CL. He will advise the P of his intentions as he performs the procedural steps. The P will confirm the procedure with TM 55-1520-240-CL. As required, the CE will visually check the affected engine for condition and advise the P* of any fire. If the engine is not on fire, the CE will move back to the ramp area and check for unusual vibrations, fuel leaks, or other problems. The CE will advise the P*/P if he finds any problems. The P* will continue to fly the aircraft until the IP/IE terminates the task.

REFERENCES:

AR 95-1
FM 1-203
TM 55-1520-240-10
TM 55-1520-240-CL

TASK: Perform flight with AFCS off.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the AFCS off and under VMC.

STANDARDS:

1. **Rated.**

a. Maintain task standards for the maneuver being performed

b. Observe the airspeed limitations in TM 55-1520-240-10.

c. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Check that the crew, passengers, cargo, and mission equipment are properly secured.

b. Correctly perform crew coordination actions.

DESCRIPTION: The P* will smoothly coordinate control movements to maintain the aircraft in trim. He will monitor the turn-and-slip indicator for indications of divergent movements. The P* will smoothly but positively react to any divergent movements of the aircraft. The CE will check that all passengers are wearing their seat belts and that all cargo and mission equipment are secured. The P and CE will maintain airspace surveillance and inform the P* of any traffic or obstacles.

NOTE: Any maneuvers in this ATM may be conducted with the AFCS off; the standards for the maneuver are the same as with the AFCS on.

REFERENCE:

TM 55-1520-240-10

TASK 1061

TASK: Perform cruise check procedures.

CONDITIONS: In a CH-47 helicopter or a CH47FS.

STANDARDS:

1. **Rated.**

a. Call for the cruise check 15 to 30 minutes after takeoff or after entry into the mission profile.

b. Without error, read the cruise check from TM 55-1520-240-CL and confirm the appropriate responses.

c. Correctly perform an in-flight fuel consumption check.

d. In addition to the initial fuel check, correctly monitor the fuel quantity and consumption rate at least every 30 minutes during the flight.

e. Check individual fuel tank quantity for proper system operation during the fuel consumption check.

f. Initiate an appropriate course of action if actual fuel consumption varies from the planned value and the mission cannot be completed with the required reserve.

g. Initiate an appropriate course of action if the CE detects a maintenance-related fault.

h. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly perform the initial cruise check when called for by the P*.

b. Without delay, inform the PC of any malfunction or discrepancy noted during the check.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will call for a cruise check after takeoff or when the aircraft enters the mission profile.

2. After the P* has called for the cruise check, the P will read TM 55-1520-240-CL for the appropriate checks. He will record the fuel quantity and the time. The P will obtain the rate of consumption from the fuel flow indicators and will compute and record the burnout and reserve entry time. He will determine if sufficient fuel is available to complete the mission and will check individual fuel tanks for the current fuel level.

3. At least every 30 minutes, the P will monitor the fuel quantity and consumption rate. If the fuel quantity or flow indicates a deviation from the initial check, he will repeat the initial check to determine if the fuel quantity is adequate for the mission. The P also will check individual fuel tanks to ensure that the system is operating normally and determine if the fuel quantity in the auxiliary fuel tanks is decreasing normally.

4. The CE will check the ramp and cabin areas during the initial cruise check when called for by the P* and every 30 minutes thereafter. During the check, the CE will remain secured to the aircraft by a safety harness connected to a 5,000-pound tie-down ring. The CE will check the following items:

a. Forward transmission area for leaks, unusual vibrations, and soundproofing security.

b. Flight control closet for leaks, extended jam indicators, loose hardware, and soundproofing security.

c. Heater compartment for component condition, leaks, and if used, proper heater operation.

d. Avionics compartment for proper cooling fan operation and component and soundproofing security.

e. Transformer-rectifier air intakes for obstructions.

f. Passenger and individual equipment for security, if applicable.

g. Internal cargo for security, if applicable.

h. Main formers in cabin roof for unusual vibrations.

i. Combining transmission area for leaks, unusual vibrations, and extended filter buttons.

j. Engine mount and drive shaft areas for unusual vibrations.

k. Maintenance panel for indication of system malfunction.

l. Aft sync shaft bearings and mounts for vibrations and signs of overheating.

m. Ramp area for leaks, chafed lines, extended filter buttons, accumulator pressures, shorted or grounded wires, and security of aft transmission access doors.

NOTE: When two NCMs are assigned to the flight, the FE will outline their specific duties during the mission briefing. The ramp and cabin checks may be divided between the NCMs.

REFERENCES:

AR 95-1
FM 1-240
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK 1068

TASK: Perform or describe emergency procedures.

CONDITIONS: In a CH-47 helicopter with an evaluator, in a CH47FS, or orally in a classroom environment and given a specific emergency condition.

STANDARDS:

1. Rated.

a. Without error, perform or describe the appropriate emergency procedure per TM 55-1520-240-10.

b. If time permits, verify the procedure with TM 55-1520-240-CL.

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Correctly perform or describe the emergency steps directed by the P*/P.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. When presented with an emergency, the P* will immediately initiate the correct underlined steps. If time permits, the P will verify the procedure with TM 55-1520-240-CL. The CE will perform the emergency steps directed by the P*/P.

2. If the emergency procedure is discussed orally, the RCMs must describe all underlined steps of the emergency procedure. The CE will discuss his portion of the emergency tasks.

NOTE 1: CE tasks may include checking for fire, preparing passengers for an emergency landing, and executing any portion of an emergency procedure that pertains to the CE.

NOTE 2: Those emergency procedures that are prohibited from practice in the aircraft will be performed in the CH47FS or discussed orally. Paragraph 6-2m lists the emergency procedures that are prohibited from practice in the aircraft.

REFERENCES:

FIH
FM 1-400
FM 20-150
TC 1-201
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 1071

TASK: Conduct passenger briefing.

CONDITIONS: Given TM 55-1520-240-CL and information about the mission.

STANDARDS: Without omissions, conduct the briefing using TM 55-1520-240-CL.

DESCRIPTION: The PC will conduct or direct another crew member to conduct applicable portions of the passenger briefing according to TM 55-1520-240-CL and the unit SOP. Examples of briefing items are--

a. Proper direction to approach and depart the aircraft.

b. Location of emergency entrances, exits, and equipment.

c. Use of seat belts.

d. Location and general use of survival equipment.

e. Security of equipment.

REFERENCES:

FM 1-301
FM 1-302
FM 1-400
FM 20-150
TC 1-201
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK 1075

TASK: Perform instrument takeoff.

CONDITIONS: In a CH-47 helicopter under IMC or simulated IMC or in a CH47FS with the hover power and before-takeoff checks completed.

STANDARDS:

1. **Rated.**

   a. Correctly set the attitude indicator.

   b. If VMC, properly clear the aircraft.

   c. Maintain required takeoff power ±2 percent torque.

   d. Maintain accelerative climb attitude ±l bar width.

   e. Maintain takeoff heading ±10 degrees until passing through ETL.

   f. Maintain the aircraft in trim after ETL.

   g. Maintain an appropriate rate of climb ±100 FPM.

   h. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. If VMC, properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **From the Ground.** The P* will align the aircraft with the desired takeoff heading. The P* and P will set their attitude indicators for takeoff (approximately level). All crew members will clear the aircraft. The P* will smoothly raise the thrust control until the aircraft becomes "light on the wheels." While referring to the flight instruments, the P* will smoothly raise the thrust control to obtain takeoff power (hover power plus 10 percent torque). As the P* raises the thrust control, he will cross-check the attitude and heading indicators to ensure proper aircraft attitude and constant heading. When takeoff power is established and the altimeter and VSI show a positive climb, he will adjust pitch attitude one to two bar widths below the horizon for the initial acceleration. At approximately 45 KIAS,

the P* will check the turn-and-slip indicator to ensure that the aircraft is in trim. He will then make the transition to coordinated flight. Upon approaching climb airspeed, the P* will adjust the controls as required to maintain the desired airspeed, rate of climb, and heading.

2. From a Hover. The P* will align the aircraft with the desired takeoff heading at the appropriate hover height. He will check the attitude indicator for the takeoff attitude. All crew members will clear the aircraft. The P* will initiate the takeoff by smoothly raising the thrust control until he reaches takeoff power (hover power plus 10 percent torque). As the P* raises the thrust control, he will maintain a level attitude. When the altimeter and VSI show a positive rate of climb, the P* will continue as in a takeoff from the ground.

NOTE 1: The P* will have less time to make the transition to the flight instruments when he takes off from a hover.

NOTE 2: The P should monitor the flight instruments during the takeoff and be prepared to accept a transfer of controls.

NOTE 3: When the crew is operating under IFR in VMC, the CE will position himself on the P*'s side of the aircraft for obstacle clearance and airspace surveillance.

NOTE 4: OGE power is required for this task.

REFERENCES:

AR 95-1
FM 1-203
FM 1-240
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 1076

TASK: Perform radio navigation.

CONDITIONS: In a CH-47 helicopter under VMC, IMC, or simulated IMC or in a CH47FS and given appropriate navigational publications.

STANDARDS:

1. **Rated.**

   a. Maintain altitude ±100 feet.

   b. Maintain airspeed ±10 KIAS.

   c. Correctly tune and identify appropriate NAVAIDs.

   d. Correctly determine the position of the aircraft.

   e. Correctly intercept and maintain the desired course ±5 degrees.

   f. Correctly identify station passage.

   g. If VMC, properly clear the aircraft.

   h. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. If VMC, properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Equipment Check.** Check all radio navigation equipment to be used during the mission. Equipment must be operable and within accuracy tolerances, if applicable, as specified in FM 1-240 and TM 55-1520-240-10.

2. **Station Identification.** Obtain the correct frequency for the desired NAVAID, tune the radio, and identify the station.

3. **Aircraft Position.** Determine the position of the aircraft with respect to a specified NAVAID per FM 1-240.

4. **Course Interception.** After identifying the desired NAVAID, determine the location of the aircraft in relation to the desired course. Turn 45 degrees toward the course (90 degrees to

expedite). Maintain the intercept heading until approaching an on-course indication. Depending on the rate of closure, start a turn that will intercept the desired track on course.

5. Course Tracking. Maintain the desired heading until navigational instruments show an off-course condition. If forecast wind drift correction does not maintain the aircraft on track, turn 20 degrees toward the course to reintercept it. If navigational instruments do not indicate movement toward the course within a reasonable time, increase the intercept angle. When the course is reintercepted, turn toward it and apply the appropriate drift correction (normally one-half of the intercept angle). Continue to bracket the course by decreasing corrections until a heading is obtained that will maintain the aircraft on course.

6. Intersection Arrival. Determine arrival at a radio intersection per FM 1-240.

7. Station Passage. Identify station passage by observing the first complete reversal of the indicator needle or the TO-FROM indicator.

REFERENCES:

AIM
AR 95-1
DOD FLIP
FM 1-240
TM 55-1520-240-10

TASK 1077

TASK: Perform holding procedures.

CONDITIONS: In a CH-47 helicopter under VMC, IMC, or simulated IMC or in a CH47FS and given an altitude, holding instructions, and appropriate navigational publications.

STANDARDS:

1. **Rated.**
   - **a.** If VMC, properly clear the aircraft.
   - **b.** Maintain altitude ±100 feet.
   - **c.** Maintain airspeed ±10 KIAS.
   - **d.** Correctly tune and identify the appropriate NAVAIDs.
   - **e.** Correctly enter the holding pattern.
   - **f.** Correctly time and track holding-pattern legs.
   - g. Correctly perform crew coordination actions.
2. **Nonrated.**
   - **a.** If VMC, properly clear the aircraft.
   - **b.** Correctly perform crew coordination actions.

DESCRIPTION:

1. Before arrival at the holding fix, the P* will analyze the holding instructions and determine the proper holding pattern and entry procedures. Upon arrival at the holding fix, the P* will turn (if required) to the predetermined outbound heading. He will maintain the outbound heading per the DOD FLIP or as directed by ATC. After the appropriate time outbound, the P* will turn to the inbound heading and apply normal tracking procedures to maintain the inbound course. He will note the time required to fly the inbound leg. The P* will adjust the elapsed time for the subsequent outbound leg to obtain the desired inbound leg time. When holding at a NAVAID, the P* will begin timing the outbound leg when abeam the station. When holding at an intersection, he will begin timing the outbound leg upon establishing the outbound heading.

2. When the crew is operating under IFR in VMC, the CE will position himself on the P*'s side of the aircraft for obstacle clearance and airspace surveillance.

REFERENCES:

AIM
DOD FLIP
FM 1-240

TASK 1078

TASK: Perform unusual attitude recovery.

CONDITIONS: In a CH-47 helicopter with a UT, an IP, or an IE and under VMC or simulated IMC or in a CH47FS.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Correctly analyze the attitude of the aircraft.

   c. Without delay, use correct recovery procedures in the proper sequence.

   d. Recover with a minimum loss of altitude.

   e. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION: Upon detecting an unusual attitude, the P* will immediately initiate a recovery to straight-and-level flight by--

a. Establishing a level bank and pitch attitude.

b. Establishing and maintaining a heading.

c. Adjusting to cruise or climb power setting.

d. Establishing and maintaining the aircraft in trim.

REFERENCES:

AR 95-1
FM 1-240

TASK 1079

TASK: Perform radio communication/intercom procedures.

CONDITIONS: In a CH-47 helicopter or a CH47FS with two-way radio communications established.

STANDARDS:

1. **Rated.**

a. Without error, adjust avionics to the proper frequencies.

b. Establish radio contact with the appropriate ATC facility.

c. When communicating with ATC facilities, use correct radio communication procedures and phraseology per the DOD FLIP.

d. Acknowledge each radio communication with ATC by using the correct aircraft call sign.

e. Acknowledge and comply with ATC instructions to change frequencies.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly use the intercom system.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Rated.** Adjust the avionics to the required frequencies. Continuously monitor the avionics. When required, establish communication with the appropriate ATC facility. Monitor the frequency before transmitting. Transmit appropriate information to the correct facility when required. Use the correct radio call sign when acknowledging each communication. When advised to change frequencies, acknowledge the instruction. Select the new frequency as soon as possible unless instructed to do so at a specific time, fix, or altitude. Use radio communication procedures and phraseology appropriate for the area of operations.

2. **Nonrated.** Use standard terms and phraseology for all intercom communications. During normal operations, monitor aircraft radio communications. During critical times such as

external load operations, do not monitor external communications if radio traffic is excessive or distracting. Do not interrupt external communications.

REFERENCES:

DOD FLIP
TM 55-1520-240-10
Unit SOP

TASK: Perform procedures for two-way radio failure.

CONDITIONS: In a CH-47 helicopter, a CH47FS, or a classroom environment.

STANDARDS:

1. Implement correct procedures for two-way radio failure.
2. Correctly perform crew coordination actions.

DESCRIPTION:

1. **VFR.** If two-way radio failure occurs while operating under VFR or if VMC are encountered after the failure, continue the flight under VFR. Land as soon as practicable.
2. **IFR.**

   a. If two-way radio failure occurs while operating under IFR in the NAS, adjust the transponder and continue the flight according to instructions in the FIH.

   b. If two-way radio failure occurs while operating under IFR outside CONUS, comply with ICAO rules or applicable host-country regulations.

REFERENCES:

DOD FLIP
FIH
Unit SOP

TASK 1081

TASK: Perform nonprecision approach.

CONDITIONS: In a CH-47 helicopter under IMC or simulated IMC or in a CH47FS, with the approach clearance received and the before-landing check completed, and given the appropriate DOD FLIP.

STANDARDS:

1. **Rated.**

a. If VMC, properly clear the aircraft.

b. Execute the approach according to AR 95-1, FM 1-240, and the DOD FLIP.

c. Maintain an appropriate airspeed ±10 KIAS.

d. Maintain altitude as directed by ATC ±100 feet.

e. Maintain the prescribed courses as follows:

(1) NDB courses--within ±5 degrees.

(2) VOR courses--within ±5 degrees using the CDI or the bearing pointer.

(3) LOC courses--within a full-scale deflection of the CDI.

f. During ASR approaches, make immediate heading and attitude changes issued by ATC and maintain heading ±5 degrees.

g. Comply with descent minimums prescribed for the approach.

h. Execute the correct missed approach procedure immediately upon reaching the MAP if a safe landing cannot be accomplished.

i. Correctly perform crew coordination actions.

2. **Nonrated.**

a. If VMC, properly clear the aircraft.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew should refer to FM 1-240, which describes approach procedures.

2. When the crew is operating under IFR in VMC, the CE will position himself on the P*'s side of the aircraft for obstacle clearance and airspace surveillance.

NOTE: Use of the doppler/omega as an IFR navigational system is not authorized; however, the crew should consider and plan for its use as an emergency backup system.

REFERENCES:

AR 95-1
DOD FLIP
FM 1-240
TM 55-1520-240-10

TASK 1082

TASK: Perform precision approach.

CONDITIONS: In a CH-47 helicopter under IMC or simulated IMC or in a CH47FS, with contact established with the controller and the before-landing check completed, and given the appropriate DOD FLIP .

STANDARDS:

1. **Rated.**

   a. If VMC, properly clear the aircraft.

   b. Execute the approach according to AR 95-1, FM 1-240, and the DOD FLIP.

   c. For an ILS approach, remain within a full-scale deflection of the CDI; on final approach, maintain glide slope indicator within a full-scale deflection.

   d. Maintain an appropriate airspeed ±1O KIAS.

   e. Maintain altitude as directed by ATC ±100 feet.

   f. Maintain heading ±5 degrees.

   g. Make immediate heading and altitude corrections issued by ATC.

   h. Comply with the decision height prescribed for the approach.

   i. Execute the correct missed approach procedure immediately upon reaching the decision height if a safe landing cannot be accomplished.

   j. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. If VMC, properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew should refer to FM 1-240, which describes approach procedures.

2. When the crew is operating under IFR in VMC, the CE will position himself on the P*'s side of the aircraft for obstacle clearance and airspace surveillance.

REFERENCES:

AR 95-1
DOD FLIP
FM 1-240
TM 55-1520-240-10

TASK 1083

TASK: Perform or describe inadvertent IMC procedures/VHIRP.

CONDITIONS: In a CH-47 helicopter under simulated IMC, in a CH47FS, or orally in a classroom environment.

STANDARDS:

1. Maintain proper aircraft control, and make the transition to instrument flight immediately.

2. Initiate a climb immediately.

3. Without error, comply with local vertical helicopter instrument recovery procedures.

4. Correctly perform crew coordination procedures.

DESCRIPTION: If inadvertent IMC are encountered, proceed as follows:

a. Level the wings on the attitude indicator.

b. Maintain heading; turn only to avoid known obstacles.

c. Adjust the torque to climb power.

d. Adjust the airspeed to climb airspeed.

e. Complete the procedure per local regulations and policies.

NIGHT OR NVG CONSIDERATIONS:

1. When wearing NVG, crew members may be able to see through thin obscurations, such as light fog and drizzle, with little or no degradation.

2. If crew members enter IMC with the pink light or landing light on, they may become spatially disoriented.

3. Crew members may remove or flip up their NVG once the P* establishes cruise flight.

REFERENCES:

AR 95-1
AR 95-2
AR 95-3
AR 95-10
FM 1-203
FM 1-240
TC 1-204
Unit SOP

TASK 1098

TASK: Perform after-landing tasks.

CONDITIONS: Given a CH-47 helicopter or a CH47FS and TM 55-1520-240-CL.

STANDARDS:

1. **Rated.**

a. Without error, read the appropriate checks from TM 55-1520-240-CL and confirm the crew members response.

b. Without error, respond to all applicable checklist items when read by the P.

c. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Without error, respond to all applicable checklist items when read by the P.

b. Correctly perform crew coordination actions.

DESCRIPTION: Accomplish after-landing tasks as required, to include after-landing, engine-shutdown, and before-leaving-aircraft checks. The P*/P will close the flight plan, if required. During engine shutdown, the CE will position himself 45 degrees from the front of the engines and correctly respond to all applicable checklist items. He will assume the fireguard position at the appropriate time and check for residual fires after the engines are secured. After the engines are secured, the CE will stand fireguard for the APU until the APU is secured.

REFERENCES:

AR 95-1
AR 385-95
DA Pamphlet 738-751
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 1099

TASK: Operate Mark XII IFF System.

CONDITIONS: In a CH-47 helicopter equipped with the Mark XII IFF System and given a mission briefing that includes signal operation instructions and a keyed system or orally in a classroom environment.

STANDARDS:

1. Correctly prepare the system for operation.

2. Correctly perform the self-test check.

3. Correctly classify IFF and transponder defects relative to the mission.

4. Correctly perform crew coordination actions.

DESCRIPTION: Perform or simulate the operational and employment procedures and precautions for the Mark XII IFF System. These include a preflight inspection; turn-on, self-test, and operational checks; mission employment doctrine and operating procedures; partial failure alternatives; and indication or signal interpretation. During shutdown, correctly execute code-holding procedures or zeroize the codes as required.

NOTE: TM 11-5895-1199-12 contains details on the Mark XII IFF System.

REFERENCES:

DOD AIM 86-100
TM 11-5895-1199-12
TM 55-1520-240-10

TASK 2004

TASK: Perform pinnacle or ridgeline operation.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the before-landing check completed.

STANDARDS:

1. **Rated.**

   a. **Approach.**

   (1) Maintain ground track alignment with the selected approach path.

   (2) Maintain a constant approach angle.

   (3) Maintain an appropriate rate of closure.

   (4) Execute a smooth, controlled termination in the forward one-third of the landing area.

   (5) Correctly perform crew coordination actions.

   b. **Takeoff.**

   (1) Properly clear the aircraft.

   (2) Perform an airspeed-over-altitude takeoff while maintaining heading ±10 degrees.

   (3) Maintain appropriate airspeed ±10 KIAS.

   (4) Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew will complete a landing area reconnaissance, as required, on the upwind side of the landing area if practicable. The P* will adjust airspeed as necessary to maintain the appropriate rate of closure along the selected flight path. He will

adjust the thrust control to maintain a constant approach angle. (The rate of closure may be difficult for the P* to determine on final until the aircraft is close to the landing area.) The P* will reduce airspeed to slightly above ETL until he can detect the rate of closure. When surface conditions permit, the P* will land to the ground. The CE will call out when the aircraft is clear of obstacles. He also will call out wheel height from 10 feet to the ground in l-foot increments if requested by the p*.

2. All crew members will clear the aircraft before takeoff. The P* will execute a VMC takeoff (Task 1018). He will adjust the thrust control to establish a climb that will clear obstacles in the flight path. The P* will adjust the cyclic as necessary to accelerate the aircraft through ETL. Upon passing through ETL, he will adjust the cyclic as necessary to accelerate to the appropriate airspeed. The P* will adjust the thrust control to maintain the takeoff attitude. He will use the pedals, as required, to maintain heading. After clearing the obstacles, the P* will proceed as in a VMC takeoff.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS:

1. Awareness of the various methods of making a suitable evaluation at night (for example, lines of contrast) is essential. Treat visual obstacles the same as physical obstacles.

2. When flying above terrain flight altitudes, keep in mind the inherent limitations of the NVG. Also be aware of the increased difficulty in estimating the rate of closure, and make the approach more slowly.

REFERENCES:

FM 1-202
FM 1-203
Task 1018
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 2005

TASK: Perform FM radio homing.

CONDITIONS: In a CH-47 helicopter or a CH47FS.

STANDARDS:

1. **Rated.**
   - **a.** Correctly tune the homing station.
   - **b.** Use the correct homing procedures.
   - **c.** Correctly identify station passage.
   - **d.** Correctly perform crew coordination actions.
2. **Nonrated.**
   - **a.** Properly clear the aircraft.
   - **b.** Correctly perform crew coordination actions.

DESCRIPTION: The P will establish contact with the station and specify definite transmission and pause periods. He will set the mode control to HOME or the HSI to FM SEL, as applicable, and ensure that the warning flags are masked. The P* will fly the aircraft to the station by heading in a direction that will cause the vertical pointer on the course indicator to center. The P* will solve ambiguity by changing the heading when the pointer centers and checking that the pointer drifts in the opposite direction. While homing to the station, the P* will change the heading slightly (10 to 15 degrees) every one or two minutes and observe that the vertical pointer continues to deflect in the opposite direction. If the vertical pointer shows a turn in the same direction, it indicates that the aircraft has passed the station. In this case, the P* will continue the turn and attempt to identify the station visually or to verify his position.

NOTE: FM homing is possible only when using the number 1 transceiver.

REFERENCES:

FM 1-203
FM 1-240
TM 55-1520-240-10

TASK: Perform aerial observation.

CONDITIONS: In a CH-47 helicopter or orally in a classroom environment.

STANDARDS:

1. Use the correct visual search techniques.

2. Accurately locate the position of the target.

3. Accurately identify the target.

4. Without error, make appropriate spot reports.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. During missions involving direct observation, the aircrew is concerned with detection, identification, location, and reporting.

a. **Detection.** Detection requires verification that an object or an activity exists.

b. **Identification.** Major factors in identifying a target are size, shape, and type of armament. Targets are classified as friendly or enemy.

c. **Location.** The exact location of targets is the objective of the mission. Depending on the nature of the targets, the observer may be required to locate the center of mass or boundaries of the targets.

d. **Reporting.** Spot reports provide commanders with critical information during the conduct of missions. The method of spot reporting is specified by the requesting agency. Reports of no enemy sightings are frequently just as important as actual enemy sightings. (Task 2091 shows the standard format for a spot report.)

2. Visual search is the systematic visual coverage of a given area so that all parts of the area are observed. The purpose of a visual search is to detect objects or activity on the ground. The ability of an observer to search a given area effectively depends on several factors. In addition to the

limitations of the human eye itself, the most important of these factors are altitude, airspeed, terrain and meteorological conditions, and visual cues.

a. Altitude. Higher altitudes offer greater visibility but less detail. Lower altitudes increase surivability.

b. Airspeed. Selection of the airspeed is determined by the altitude, terrain, enemy situation, and meteorological conditions.

c. Terrain and meteorological conditions. The type of terrain can vary from dense jungle to barren wasteland and will affect the size and details of the area that can be effectively covered. The prevailing terrain and meteorological conditions often mask objects and allow only a brief exposure period, especially at NOE altitudes.

d. Visual cues. In areas where natural cover and concealment make detection difficult, visual cues may indicate enemy activity. Some of these cues are as follows:

(1) Color. Foliage used for camouflage may differ from the color of natural foliage.

(2) Texture. Smooth surfaces, such as glass windows or canopies, will shine and reflect light. Rough surfaces do not reflect light.

(3) Shadows. Man-made objects cast distinctive shadows that are characterized by regular shapes and contours as opposed to random patterns that occur naturally.

(4) Trails. Trails leading into an area should be observed for cues as to type, quantity, and recentness of traffic.

(5) Smoke. Smoke should be observed for color, smell, and volume.

(6) Movement and light. Movement during daylight and light at night are the most easily detectable signs of enemy activity. Movement may include disturbance of foliage, snow, soil, or birds.

(7) Obvious sightings. The aircrew must be aware that obvious sightings may be intentional because of high concentrations of enemy antiaircraft weapons.

3. Systematic methods for conducting visual aerial observation include side scan, motive, and stationary techniques. The technique used depends on the altitude flown and the type of terrain.

a. Side-scan technique. This technique normally is used when the aircraft is operating at an altitude of 100 feet AGL or higher. Over most terrain, the observer systematically--

(1) Looks out approximately 1,000 meters and searches in toward the aircraft.

(2) Looks out one-half the distance (500 meters) and searches in toward the aircraft.

(3) Looks out one-fourth the distance (250 meters) and searches in toward the aircraft.

b. Motive technique. This technique is used when the aircraft is operating at terrain flight altitudes and at airspeeds of 10 KIAS or faster. The entire area on either side of the aircraft is divided into two major sectors: the nonobservation sector and the observation work sector. The nonobservation sector is the area where the aircrew's field of vision is restricted by the physical configuration of the aircraft. The observation work sector is that portion of the field of vision to which the search activity is confined. The observation work sector is subdivided into two smaller sectors.

(1) The acquisition sector is the forward 45-degree area of the observation work sector. This is the primary search area.

(2) The recognition sector is the remainder of the observation work sector. In using the motive technique, the observer looks forward of the aircraft and through the center of the acquisition sector for obvious sightings. He then scans through the acquisition sector, gradually working back toward the aircraft.

c. Stationary technique. This technique is used at NOE altitudes with the aircraft hovering in a concealed position. When using the stationary technique, the observer makes a quick overall search for sightings, unnatural colors, outlines, or movements. He starts scanning to the immediate front, searching an area approximately 50 meters in depth. The observer continues to scan outward from the aircraft, increasing the depth of the search area by overlapping 50-meter intervals until he has covered the entire search area.

REFERENCES:

FM 1-203
FM 1-402
FM 17-95
Task 2091

TASK: Perform evasive maneuvers.

CONDITIONS: In a CH-47 helicopter or a CH47FS, in a simulated tactical environment with a tactical map, or orally in a classroom environment.

STANDARDS:

1. Use the correct evasive maneuver consistent with the type of hostile fire encountered.

2. Correctly perform crew coordination actions.

DESCRIPTION:

1. When engaged by enemy fire or upon receipt of a signal indicating acquisition by enemy radar, the p* will deploy to cover and perform the appropriate evasive maneuver. The specific evasive maneuver required will depend on the type of hostile fire encountered. Some pointers are given below.

a. **Tanks and small arms.** Immediately turn away from the fire toward an area of concealment. If concealment is unavailable, sharp turns of unequal magnitude and at unequal intervals and small changes in altitude offer the best protection until you are beyond the effective range of hostile weapons. If the situation permits, employ immediate suppressive fire.

b. **Large caliber antiaircraft fire (radar-controlled).** Execute an immediate 90-degree turn to move the helicopter away from the burst. After turning, do not maintain a straight line of flight or the same altitude for more than ten seconds before initiating a second 90-degree turn. An immediate descent to terrain flight altitude will reduce the danger.

c. **Fighters.** When in an area where enemy fighters are known or suspected to be operating, fly the helicopter at terrain flight altitude as much as possible. Upon sighting a fighter, try to mask the helicopter. If the fighter is alone and executes a dive, turn the helicopter toward the attacker and descend. This maneuver will cause the fighter pilot to increase his attack angle. Depending on the fighter's dive angle, it may be advantageous to turn sharply and maneuver away once the attacker is committed. The fighter pilot will then have to break off his attack to recover from the maneuver. Once the fighter breaks off

his attack, maneuver the helicopter to take advantage of terrain, vegetation, and shadow for concealment. The USAAVNC Air Combat Maneuvers ETP describes these maneuvers in detail.

NOTE: The USAAVNC Air Combat Maneuvers ETP can be obtained by writing Commander, US Army Aviation Center, ATTN: ATZQ-DPT-P, Fort Rucker, AL 36362-5152.

d. Helicopters. Use the appropriate air combat maneuvers to break contact with or to evade enemy helicopters.

e. Heat-seeking missiles. Try to keep helicopter heat sources away from the enemy. If a missile is sighted, fire decoy flares and maneuver the helicopter to take advantage of terrain and vegetation for concealment.

f. Antitank guided missiles. Some missiles fly slowly and can be avoided by rapidly repositioning the helicopter. If terrain or vegetation is not available for masking, remain oriented on the missile as it approaches. As the missile is about to impact, rapidly change the flight path or altitude to evade it.

g. Artillery. Depart the impact area and determine NBC requirements.

h. Radar-guided missiles. If the helicopter is equipped with a radar jammer, maintain aircraft orientation toward the enemy radar. Maneuver the helicopter to break the line of sight to the radar source while simultaneously activating chaff (if available) .

2. If hit by hostile fire, rapidly assess the situation and determine an appropriate course of action. The most important consideration in an emergency is aircraft control. Therefore, the first step is to assess aircraft controllability. Then check all instruments and warning and caution lights. If a malfunction is indicated, initiate the appropriate emergency procedure. If continued flight is possible, take evasive action. Make a radio call (Mayday or Pan) to report your situation, location, and action. Also request assistance if desired. Continue to be alert for unusual control responses, noises, and vibrations. Monitor all instruments for an indication of a malfunction. Fly the helicopter to the nearest secure location. Then land and inspect the helicopter to determine the extent of damage and whether flight can be continued to a medical or maintenance facility per the unit SOP.

REFERENCES:

FM 1-107
FM 1-112
FM 1-116
FM 1-203
FM 17-95
TM 55-1520-240-10
Unit SOP

TASK: Perform multiaircraft operations.

CONDITIONS: In a CH-47 helicopter under VMC or a CH47FS.

STANDARDS:

1. **Rated.**

a. Correctly maneuver into the flight formation.

b. Correctly change position in the flight formation when required.

c. Maintain proper horizontal and vertical separation for the type of formation flight being conducted.

d. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Assume a position in the aircraft that facilitates observation of other aircraft in the formation.

b. Assist the P* in maintaining aircraft separation and obstacle clearance.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P*/P will perform formation flight per AR 95-1, TC 1-201, TC 1-204, and the unit SOP.

2. If the CE is in the trail aircraft, he will monitor the aircraft in the formation. If the CE is in the lead aircraft, he will maintain visual contact with the trailing aircraft. The CE will keep the PC informed about aircraft separation and traffic and obstacle clearance.

NIGHT OR NVG CONSIDERATIONS: Increase the interval between aircraft to three to five rotor disks, and keep formation changes to a minimum. Use proper scanning techniques to avoid fixation.

a. Night. During unaided night flight, the crew should use formation lights as well as position lights.

b. N V G .

(1) A minimum of two NCMs wearing NVG is required. One NCM will position himself in the aircraft so that he can observe other aircraft in the formation and assist in maintaining aircraft separation and obstacle clearance.

(2) The following limitations apply when the crew is en route:

(a) Over 200 feet AHO. Only straight trail, staggered trail, and echelon formations are authorized.

(b) 100 to 200 feet AHO. Maximum speed is 100 KIAS. Only free cruise, straight trail, staggered trail, and echelon formations are authorized.

(c) 25 to 100 feet AHO. Maximum airspeed is 70 KIAS. Only free cruise formation, together with techniques of movement, is authorized.

(d) Less than 25 feet AHO with wheels above trees and vecretation in the flight path. Maximum airspeed is 40 KIAS. Only free cruise formation, together with techniques of movement, is authorized.

NOTE: The NCM who is not engaged in observing other aircraft in the formation will perform flight duties not related to the formation and other duties directed by the PC.

REFERENCES:

AR 95-1
TC 1-201
TC 1-204
Unit SOP

TASK 2013

TASK: Perform paradrop operations.

CONDITIONS: In a CH-47 helicopter with a jumpmaster and given a designated altitude and appropriate publications.

STANDARDS:

1. **Rated.**

   a. Properly conduct a thorough crew/passenger briefing.

   b. Ensure that the aircraft is properly prepared for the mission.

   c. Maintain airspeed ±5 knots.

   d. Maintain appropriate altitude ±100 feet.

   e. Maintain appropriate ground track over the drop zone.

   f. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly prepare the aircraft for the mission per TM 55-1520-240-10 and the unit SOP.

   b. Correctly perform crew coordination actions.

WARNING

Ensure that the flight engineer and the jumpmaster are wearing a safety harness, which is secured to a tie-down ring, anytime the cargo ramp is opened.

DESCRIPTION:

1. The CE will remove the ramp extensions and ensure that the ramp and cabin floor are clean and dry. He will properly install the static line anchor cable and retriever, if needed, per FM 1-400 and TM 55-1520-240-10. The CE will ensure that the static line anchor cable does not sag more than 6 inches and will check the turnbuckle for safety. He will pad and tape all clamps

on the cable with cellulose wadding and masking tape. The CE will rig the troop seats for the mission; adjust the seat backs, if required; and ensure that airsick bags are available.

2. The P*/P will thoroughly brief the crew members, jumpmaster, and parachutists. He will ensure that the aircraft is properly rigged per FM 1-400 and TM 55-1520-240-10. The P* will maintain altitude, airspeed, and ground track as determined during premission planning. Ground track corrections for wind drift may be received by radio from the drop zone control officer or by intercom from the jumpmaster. The CE will lower the ramp to a 3-degree down position prior to the crew beginning the drop. The crew will conduct the paradrop per the procedures covered in the briefing and the references listed below. The PC will check that the jumpmaster or CE retrieves the static lines as soon as the last parachutist has cleared the aircraft.

NOTE: If the jumpmaster cannot communicate directly with the P*/P, he will communicate with the CE via hand-and-arm signals. The CE will relay necessary information to the P*/P via the intercom.

CAUTION

Ensure that the static lines remain secured to the anchor cable until the aircraft has landed. If recovery of the static lines is impossible, execute a running landing to avoid entangling the deployment bags in the rotor system.

CAUTION

When parachutists are equipped with automatic parachute openers and the mission is aborted, ensure that the openers are disarmed before beginning the descent.

REFERENCES :

AR 95-1
AR 95-3
FM 1-400
FM 57-220
TM 10-1670-201-23
TM 55-1520-240-10
Unit SOP

TASK: Perform external load operations.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the crew briefing completed and aircraft cleared.

STANDARDS:

1. Rated.

a. Ensure that the aircraft remains clear of the load and any obstacles.

b. Perform a vertical ascent with the load to a load height of 10 feet, ±3 feet, AGL.

c. Perform a vertical descent with the load to the desired touchdown point ±5 feet.

d. Ensure that the load remains clear of any obstacles and is not dropped or dragged.

e. Correctly perform crew coordination actions.

2. Nonrated.

a. Direct the P* over the load for hookup using no more than two directions at a time.

b. Properly direct the P* to the release area and clear the load for release.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft during the maneuver. He will keep the aircraft clear of all obstacles and hover the aircraft toward the load. The CE will ensure that the radio switches on the ICS are off, the cargo hook switch on the hoist operator's panel is armed, and the hoist operator's grip is within easy reach. The CE will attach his restraint harness to a 5,000-pound tie-down ring and assume a position at the right aft corner of the rescue hatch. The P will announce when he arms the cargo hook and turns down the P*'s radio switches, if required. The P will control the RRPM. The P* will

announce when the load is under the nose of the aircraft or when he loses sight of the load. The P* will follow the CE's directions while positioning the aircraft for the load hookup.

2. When the load is hooked, the CE will inform the P* and switch off his hot mike if applicable. The CE will monitor the load and give directions to the P* to maintain the aircraft positioned over the load. If a ground crew is used for the hookup, the CE will advise the P* when and in what direction the crew cleared the load and aircraft. The CE will monitor the load rigging and advise the P* when the slings are tight. He will call out load height in l-foot increments until the load is 10 feet off the ground. When the load is stable and the rigging appears safe, the CE will announce that the load is cleared for flight.

3. The P* will maintain a 10-foot load height until the P completes a hover power check and a before-takeoff check. Before takeoff, the P* will ensure that the load is cleared for flight by the CE. The P* will perform a VMC takeoff or a terrain flight takeoff as appropriate. During the takeoff, the CE will call out load height above the ground or obstacles in 5-foot increments up to 25 feet. He will then call out load height in 25-foot increments up to a load height of 100 feet.

4. The P* will make smooth control inputs to initiate the takeoff. During the acceleration, he will avoid unnecessary nose-low attitudes and overcontrolling to reduce load oscillation. The P* will increase airspeed slowly to determine the flight characteristics of the load. If a load oscillation develops, he will decrease airspeed.

5. During cruise flight, the P will place the cargo hook master switch in the OFF position, as required, and announce that the hook is off. The P will turn on the P*'s radio switches as required. He will advise the P* to take control of the RRPM. The CE will monitor the load for oscillation and advise the P* of the status of the load. If a load oscillation develops, the P* will decrease airspeed to reduce the oscillation.

NOTE: The P will place the cargo hook master switch in the OFF position upon reaching cruise flight. The determination of cruise flight will be per the unit SOP.

6. The P* will perform a VMC approach or a terrain flight approach as appropriate. The P will announce when he arms the cargo hook and turns off the P*'s radio switches if required. The P will announce that he will control the RRPM. The P* will use an approach angle that safely clears the obstacles, and he will terminate the approach at a load height of 10 feet AGL.

The CE will begin calling out the load height at 100 feet AGL. He will call altitude from 100 feet AGL to 25 feet AGL in 25-foot increments. The CE will advise the P* when the load is clear of obstacles and continue to call out load height in 5-foot increments down to a stabilized load height of 10 feet. He will direct the P* to position the aircraft as required to the release area. The CE will then clear the load vertically down to the ground. He will call out load height in l-foot increments until the load touches down. The CE will advise the P* when the load is on the ground, when there is slack in the sling, and when to release the load so that the clevis will not fall and strike the load. The P*/P will release the load per the unit SOP, ensuring that the clevis falls clear of the load. The CE will advise the p* when the load is released and the aircraft is cleared to reposition. Figure 6-8 shows the standard words and phrases that the crew should-use when conducting external load operations.

"Hook is armed."	"Forward hook is hooked."
"Load under the nose."	"Aft hook is hooked."
"Load in sight."	"Mid-hook is hooked."
"Forward."	"Hookup crew clear right."
"Aft."	"Hookup crew clear left."
"Left."	"Slings coming tight."
"Right."	"Slings tight."
"Down."	"Load is off ground."
"Up."	"Cleared for flight."
"Hold."	"Load on ground."
"Clevis on pole."	"Slack in the slings."
"Clevis on shepherd's hook."	"Release the load."

Figure 6-8. Standard words and phrases during external load operations

"Clevis in hand."	"Load is released."
"Clevis on cargo hook."	"Clear to reposition."
"Load is hooked."	"Hook is off."

Figure 6-8. Standard words and phrases during external load operations (continued)

NOTE 1: Prior to conducting an external load operation, crew members must ensure that they can communicate with each other.

NOTE 2: The CE should place his intercom switch to "hot mike" when he uses the cargo loading pole.

NOTE 3: The P* will not allow the external load to descend below the hover height until the CE has cleared the load to the ground.

NOTE 4: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS:

1. For unaided night flight, both searchlights should be operational. If an NVG filter is installed, it should be removed.

2. Hovering with minimum drift is difficult and requires proper scanning techniques and crew coordination. If possible, the crew should select an area with adequate ground contrast and reference points.

3. The NCM should wear NVG during NVG external load operations. He may use a flashlight with an NVG compatible lens to view the load.

4. During the load hookup and after the slings are tight, the P should refer to the radar altimeter for actual aircraft height AGL. He should then round up the height to the nearest 5 feet and add 10 feet for the appropriate hover height.

5. During the approach, the P should monitor the radar altimeter from 100 feet to the hover height obtained in 4 above. He will call out the altitude in increments of 25 feet down to the sling altitude. The CE will monitor the load and inform the p* if he determines that the rate of descent or airspeed is

excessive or if he doubts the accuracy of the radar altimeter. When the P announces the sling altitude, the CE will clear the load down to the release area, calling out altitude in l-foot increments to the ground.

REFERENCES:

AR 95-1
AR 95-2
AR 95-3
FM 1-203
FM 55-450-3
FM 55-450-4
FM 55-450-5
TC 1-201
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK 2017

TASK: Perform internal load operations.

CONDITIONS: In a CH-47 helicopter.

STANDARDS:

1. Ensure that floor loading limitations are not exceeded.
2. Ensure that passengers and cargo are secured.
3. Correctly perform crew coordination actions.

DESCRIPTION: Formulate a load plan, and compute aircraft weight and balance. Complete a DD Form 365-4 (Weight and Balance Clearance Form F) if required. Ensure that proper cargo/ passenger loading and tie-down procedures are used.

NOTE 1: If the aircraft is not shut down for loading, a passenger briefing may be impractical. Passengers may be pre-briefed or passenger briefing cards used per local directives or the unit SOP.

NOTE 2: If the cargo/rescue winch is used, the NCM must ensure that it is correctly operated per TM 55-1520-240-10.

REFERENCES:

AR 95-1
AR 95-2
AR 95-3
AR 95-27
FM 1-203
FM 1-302
FM 55-450-2
TC 1-201
TC 1-204
TM 55-1520-240-10
TM 55-1520-240-CL
Unit SOP

TASK: Operate aircraft survivability equipment.

CONDITIONS: In a CH-47 helicopter or a CH47FS equipped with ASE and during a tactical flight in a simulated threat environment or orally in a classroom environment.

STANDARDS:

1. Correctly prepare the equipment for operation.

2. Without error, perform a self-test check, if required.

3. Without delay, identify the friendly or threat radar system from the visual display or audio warning.

4. Properly operate the equipment.

5. Correctly perform crew coordination actions.

DESCRIPTION: Perform or simulate operational and employment procedures and precautions for the AN/ALQ-156(V)l, AN/APR-39(V)l, and M130 (flare dispenser). These include preflight inspection: turn-on, self-test, and operational checks; mission employment doctrine and operating procedures; partial failure alternatives: indication or signal interpretation; and shutdown procedures.

REFERENCES:

FM 1-101
TM 11-5841-283-12
TM 11-5865-201-12

TASK 2072

TASK: Perform emergency procedures for actual or simulated NVG failure.

CONDITIONS: In a CH-47 helicopter or a CH47FS with NVG, under actual or simulated NVG conditions, or orally in a classroom environment.

STANDARDS:

1. Correctly identify or describe indications of impending NVG failure.

2. Correctly perform or describe emergency procedures for NVG failure.

3. Correctly perform crew coordination actions.

DESCRIPTION: Impending NVG failure is usually indicated by flickering or dimming in one or both tubes (AN/PVS-5) or illumination of the 30-minute, low-voltage warning indicator (AN/AVS-6). Upon indication of NVG failure, perform one of the following procedures:

a. AN/PVS-5 (single battery).

(1) Immediately announce "Goggle failure," and transfer the flight controls if on the controls at the time of the failure.

(2) After the other RCM acknowledges, turn the rotary switch OFF, replace the battery, and turn the switch ON.

(3) Advise the other RCM of restored vision or of continued failure.

b. AN/PVS-5 series (dual battery) or AN/AVS-6 (ANVIS). Immediately announce "Goggle failure," and initiate a climb if obstacle clearance is questionable. Then switch to the second battery and advise the other RCM of restored vision or of continued failure. (Transfer the flight controls if on the controls at the time of failure and vision is not restored.)

NOTE 1: NVG tube failure is infrequent and usually provides ample warning. Only occasionally will a tube fail completely in a short time. Rarely will both tubes fail at the same time. There is no remedy for in-flight tube failure.

NOTE 2: If an NCM experiences goggle failure, he will immediately inform the other crew members and attempt to restore vision. The NCM will advise the P*/P of restored vision or of continued failure.

NOTE 3: The P*/P should consider aborting or changing the mission if a crew member's NVG fails and another set is not available.

REFERENCES:

TC 1-201
TC 1-204
TM 11-5855-238-10
TM 11-5855-263-10
Unit SOP

TASK 2075

TASK: Operate armament subsystem.

CONDITIONS: In a CH-47 helicopter.

STANDARDS:

1. Properly install, check, operate, and clear the M24 or M41 armament subsystem per TM 55-1520-240-10.

2. Perform the appropriate emergency procedure if the gun malfunctions during firing.

DESCRIPTION: Use the procedures in TM 55-1520-240-10 to perform preflight checks, before-takeoff checks, and in-flight operation for the M24 or M41 armament subsystem. Refer to TC 1-140 for details on helicopter gunnery qualification.

REFERENCES:

DA Pamphlet 738-751
FM 23-67
TC 1-140
TC 1-201
TC 1-204
TM 9-1005-224-10
TM 9-1005-262-13
TM 55-1520-240-10
TM 55-1520-240-CL

TASK 2076

TASK: Perform landing area reconnaissance.

CONDITIONS: In a CH-47 helicopter, a CH47FS, or a mission planning area with appropriate maps, navigational charts, and reconnaissance cards or photos of the pickup or landing zone.

STANDARDS:

1. **Rated.**

   a. Correctly determine if the area is suitable for the landing.

   b. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION: In a mission planning area, the P*/P will determine if the landing area is suitable for the operation. Upon arrival at the landing site, the P*\P will complete the landing area reconnaissance as appropriate. He will evaluate the area for size, suitability, landing surface, and anticipated wind direction. The P*/P will observe any obstacles that surround the area and determine what effect, if any, the wind and obstacles will have on aircraft performance. He will select a flight path into the landing area based on the lowest obstacles; wind direction: meteorological conditions; and, if applicable, the enemy situation. The P*/P will select a touchdown point normally in the upper one-third of the usable landing area. He will select a tentative takeoff path using the information listed above. The CE will assist the P*/P with the reconnaissance if required. He will advise the P* if he detects any obstacles that will interfere with the landing.

REFERENCES:

FM 1-203
TC 1-201
TC 1-204
TM 55-1520-240-10
Unit SOP

TASK 2078

TASK: Perform terrain flight mission planning.

CONDITIONS: Prior to flight in a CH-47 helicopter or a CH47FS and given a mission briefing, navigational computer, navigational maps, and other materials as required.

STANDARDS:

1. Correctly analyze the mission.

2. Perform a map or photo reconnaissance, and ensure that obstacles to terrain flight are plotted.

3. Select appropriate terrain flight modes.

4. Select appropriate primary and alternate routes.

5. Obtain and correctly evaluate the weather briefing.

6. Conduct a thorough crew briefing.

7. Correctly perform crew coordination actions.

DESCRIPTION: Analyze the mission in terms of the METT-T. Plan the flight by conducting a map or an aerial photo reconnaissance. Obtain a thorough weather briefing which covers the entire mission. This briefing should include sunrise and sunset times, density altitudes, winds, and visibility restrictions. If the mission is to be conducted at night, the briefing must also include moonrise and moonset times and ambient light levels. Determine primary and alternate routes, terrain flight modes, and movement techniques. Compute time, distance, and fuel requirements. Annotate the map or overlay with sufficient information to complete the mission. In planning the terrain flight, consider obstacles, checkpoints, observation posts, and enemy and friendly positions. Review contingency procedures. Thoroughly brief the crew on the mission.

NIGHT OR NVG CONSIDERATIONS: More detailed flight planning is required when the crew conducts the flight in reduced visibility or at night (aided or unaided). TC 1-204 contains details on night navigation.

REFERENCES:

FM 1-112
FM 1-116
FM 1-203
TC 1-201
TC 1-204
Unit SOP

TASK 2079

TASK: Perform terrain flight navigation.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given a mission briefing and required maps and materials.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Correctly identify the location of the aircraft within 200 meters (500 meters NVG).

   c. Locate the final objective within 100 meters.

   d. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft and will respond to navigational instructions and cues given by the P. The P* will acknowledge commands issued by the P for heading and airspeed changes necessary to navigate the desired course.

2. The P will direct the P* to adjust aircraft heading and airspeed as appropriate to navigate the desired course. The P will use rally terms, specific headings, relative bearings, or key terrain features to accomplish this task. Examples are “turn left," "stop turn," and “turn down the valley to the left.” The use of standard terms helps prevent misinterpretation of information and reduces unnecessary cockpit conversation. The P* will announce significant terrain features to assist the P with navigation. The P will announce all plotted wires and other obstacles prior to approaching their location.

a. During terrain flight close to the ground (80 feet AHO and below), the crew may use several navigational techniques. One technique is to identify prominent terrain features that are located some distance ahead of the aircraft and that lie along or near the course. Using these points to key on, the P* can maneuver the aircraft to take advantage of the best terrain and

vegetation for concealment. If general navigational techniques do not apply, the crew must navigate by identifying a series of successive checkpoints. To remain continuously oriented, the P must identify actual terrain features with those on the map.

NOTE: When navigating 80 feet AHO and below, the P will not give the P* headings for direction. He should not give the p* any directions that will cause him to focus his attention inside the aircraft.

b. The P can effectively compute time and distance for terrain flight navigation between 80 and 200 feet AHO. This means that the P can tell the P* to fly specific headings and airspeeds. The crew should use the doppler/omega as a backup to terrain flight navigation. The crew also can use radio navigation, depending on the terrain and enemy situation.

NIGHT OR NVG CONSIDERATIONS: More detailed flight planning and map preparation are required when the flight is conducted in reduced visibility or at night (aided and unaided). TC 1-204 contains details on night navigation. NVG navigation with standard maps can be difficult because of map colors and Symbology.

REFERENCES:

FM 1-203
FM 1-240
FM 21-26
TC 1-201
TC 1-204

TASK 2080

TASK: Perform terrain flight takeoff.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the hover power and before-takeoff checks completed.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Maintain takeoff heading ±10 degrees.

   c. Maintain the takeoff flight path, until clear of obstacles.

   d. Maintain power as required to clear obstacles safely while not exceeding aircraft limitations.

   e. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will determine the direction of the takeoff by analyzing the tactical situation, the wind, the long axis of the takeoff area, and the lowest obstacles. He will select reference points to assist in maintaining the takeoff flight path.

2. The P* will remain focused outside the aircraft during the maneuver. He will announce when he initiates the takeoff, whether he will take off from the ground or from a hover, and his intent to either abort or alter the takeoff. The P* will coordinate the cyclic and thrust control as necessary to attain a constant angle of climb that will ensure obstacle clearance. He will maintain heading with the pedals. Once the obstacles are cleared, the P* will smoothly adjust the flight controls to make the transition to terrain flight.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS:

1. Before leaving the ground, the crew must determine if artificial lighting is required.

2. TC 1-204 contains additional information on terrain flight.

REFERENCES:

FM 1-203
TC 1-204
TM 55-1520-240-10

TASK 2081

TASK: Perform terrain flight.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given a mission briefing and required maps and materials.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Fly as close to the earth's surface as the vegetation, ambient light, weather, and obstacles will permit.

   c. Maintain airspeed appropriate for the enemy situation, vegetation, ambient light, weather, and obstacles.

   d. Maintain an altitude that will safely clear the obstacles.

   e. Maintain aircraft in trim when airspeed is above 40 KIAS.

   f. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Terrain flying involves flight close to the earth's surface (200 feet AHO and below). The crew will seldom fly one airspeed or altitude during terrain flight. They usually will vary airspeed and altitude while maneuvering over the desired route. During terrain flight, the crew is primarily concerned with the enemy and obstacle avoidance.

2. The P* will remain focused outside the aircraft and acknowledge all navigational instructions given by the P. He will announce his intended direction of flight or any deviation from instructions given by the P.

3. The P and CE will warn the P* of any obstacles they detect in the flight path or identify on the map. They will announce when they detect excessive attitude or altitude changes or when their attention is focused inside the aircraft.

CAUTION

The P* will immediately initiate a climb if any crew member announces "Climb, climb, climb." The crew member who sees the obstacle will only use this phrase if he does not have enough time to give detailed directions.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: When wearing the NVG, the P* will not exceed 40 KIAS when flying at or below 25 feet AHO. Between 25 feet and 80 feet AHO, he will not exceed 70 KIAS. Above 80 feet AHO, the P* may use any airspeed up to Vne.

REFERENCES:

FM 1-203
FM 1-240
FM 1-400
FM 21-26
TC 1-201
TC 1-204

TASK 2084

TASK: Perform terrain flight approach.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the before-landing check completed.

STANDARDS:

1. **Rated.**

a. Maintain a safe approach angle to clear obstacles in the the flight path.

b. Maintain ground track alignment as necessary for the landing area.

c. Maintain an appropriate rate of closure.

d. Make a smooth, controlled termination at the intended approach point.

e. Properly clear the aircraft during the approach.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly clear the aircraft.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* may initiate the approach from a straight-in or modified pattern. The type of approach selected will depend on the tactical situation, wind, long axis of the landing area, lowest obstacles, and arrival path.

2. The P* will remain focused outside the aircraft to clear the aircraft throughout the approach and landing. He will maneuver the aircraft as required to intercept the desired approach path. The P* will adjust airspeed as necessary and begin the approach upon intercepting an angle that ensures obstacle clearance. He will use the thrust control and cyclic to progressively decrease the rate of descent and forward speed, as necessary, to the intended point of landing. The P* will announce his decision to terminate at a hover, to the ground with zero forward speed,

or with a run-on landing. His decision will depend on aircraft loading and environmental conditions. The P* should execute a go-around if he loses sight of the touchdown area.

3. The P will remain focused outside the aircraft to assist the P* in clearing the aircraft. He will warn the P* of any obstacles that he detects.

4. The CE will clear the aircraft during the approach. He will advise the P* when the tail of the aircraft is clear of all obstacles.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: Movement over areas of limited contrast, such as tall grass, water, or desert, tends to cause spatial disorientation. The crew should seek hover areas which provide adequate contrast. If the P* becomes disoriented, he should apply sufficient power and execute a takeoff. If a takeoff is not feasible, the P* should attempt to maneuver the aircraft forward and to the ground to limit the possibility of touchdown with sideward or rearward movement.

REFERENCES:

FM 1-203
TC 1-201
TC 1-204
TM 55-1520-240-10

TASK 2086

TASK: Perform masking and unmasking.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the hover power check completed.

STANDARDS:

1. Rated.

a. Perform a thorough map reconnaissance of the desired observation area, as necessary.

b. Properly clear the aircraft.

c. Correctly mask the aircraft from enemy visual and electronic detection.

d. Keep exposure time to a minimum.

e. Maintain a sufficient distance behind an obstacle to allow for safe maneuvering.

f. Move to a new location, if available, before subsequent unmasking.

g. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly clear the aircraft.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft to clear the aircraft throughout the maneuver.

2. The P will perform a thorough map reconnaissance, as required, to identify natural and man-made features prior to the unmasking. The P and CE will warn the P* of any obstacles. The P* will raise the thrust control as necessary to unmask and adjust cyclic as required for vertical or horizontal unmasking. He will not expose the aircraft longer than necessary to observe the area. The P* will remask and reposition the aircraft after the crew completes the observation.

3. Crew members must clear directly below the aircraft if descending vertically or the flight path if moving laterally.

a. Masking and unmasking in flight. With the aid of the map, the P will navigate to the objective.The P* will take advantage of the terrain and vegetation to prevent exposure of the aircraft to enemy visual observation or electronic detection. If the aircraft becomes unmasked, the P* will try to minimize the exposure time.

b. Unmaskingat a hover (vertically). The P* will announce his intent to unmask and will ensure that sufficient power is available to unmask. He will raise the thrust control until he obtains sufficient altitude to see over the mask while not exceeding aircraft operating limitations. When possible, the P* will unmask at a safe distance from the mask to permit a rapid descent to a masked condition if the aircraft is detected, fired on, or loses power. The P* must be aware of a common tendency to move forward or rearward while masking and unmasking vertically. He must keep exposure time of the aircraft to a minimum.

c. Unmasking at a hover (laterally). Sometimes, the P* may unmask the aircraft by moving laterally from the mask. The p* will announce his intent to hover the aircraft sideward to provide the smallest silhouette possible to enemy observation or fire. The P and CE will warn the P* of any obstacles. The P* will keep exposure time of the aircraft to a minimum.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS:

1. When hovering above 25 feet without aircraft lights, the P* may have difficulty in maintaining altitude and position. (The barometric altimeter is not reliable for this maneuver.) The P* should use the radar altimeter to assist in maintaining a constant altitude. Otherwise, the P* must use references, such as lights, tops of trees, or man-made objects above and to the front and sides of the aircraft. By establishing a reference angle to these objects, the P* can detect altitude changes from changes in his viewing perspective.

2. Hovering near ground features, such as roads, provides ideal references for judging lateral movement. The P* may become spatially disoriented when changing his viewing perspective back and forth between high and low references. Therefore, he must rely on the P and CE for assistance in maintaining orientation.

REFERENCES:

FM 1-203
TC 1-204
TM 55-1520-240-10

TASK: Perform terrain flight deceleration.

CONDITIONS: In a CH-47 helicopter or a CH47FS at the lowest level of terrain flight (25 feet AHO and below) with the hover power check completed.

STANDARDS:

1. **Rated.**

   a. Properly clear the aircraft.

   b. Maintain heading alignment with the selected flight path ±10 degrees.

   c. Maintain the aft rotor clear of all obstacles.

   d. Decelerate to the desired airspeed or to a full stop at the selected location ±50 feet.

   e. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly clear the aircraft.

   b. Correctly perform crew coordination actions.

DESCRIPTION: The P* will initially raise the thrust control to maintain the altitude of the aft landing gear. (Thrust control application may not be necessary when the maneuver is initiated at higher airspeeds.) The P* must consider variations in the terrain and obstacles when determining aft rotor clearance. He will apply aft cyclic to slow to the desired airspeed or to a full stop while adjusting the thrust control to maintain the altitude of the aft landing gear. The P* will maintain heading with the pedals and will make all control movements smoothly. If the altitude of the aft landing gear increases during the deceleration, the P* may need to lower thrust to return to the desired altitude.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: The P* must avoid making abrupt changes in attitude because the NVG will limit his field of view. If the P* changes the pitch attitude excessively, he may have difficulty in returning the aircraft to level flight.

REFERENCES:

FM 1-203
TC 1-204
TM 55-1520-240-10

TASK 2089

TASK: Perform nonrated crew duties during a maintenance test flight.

CONDITIONS: In a CH-47 or orally in a classroom environment and given TM 55-1520-240-MTF.

STANDARDS:

1. Properly perform or describe maintenance procedures and checks per TM 55-1520-240-MTF.

2. Properly perform or describe maintenance procedures and checks directed by the MP.

3. Immediately inform the MP of any malfunction or discrepancy detected during the maintenance procedures or checks.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. Before and during the test flight, the CE must constantly monitor all aircraft systems and components. He will inform the MP of any unusual vibrations, noises, smells, leakage, or component malfunctions. The CE also will perform any maintenance procedures and checks required by the MP.

2. Prior to flight, the CE will remove any additional panels, covers, and cowlings required by the MP. If the DASH actuator is required for a mechanical rig check, the CE will set it to 36 inches and disconnect the electrical connectors.

3. The CE will make the following checks:

a. **Maintenance panel check.** The CE will check the maintenance panel per TM 55-1520-240-MTF. He will check and announce each individual hydraulic system pressure and press to test all panel lights. The CE will ensure that the XMSN main and AUX press lights and ground contact lights remain on. He will announce when he ground tests the latch indicators and checks all indicators for proper operation.

b. **Swivel locks check.** The CE will check the swivel lock actuators and inform the MP of their position (locked or unlocked).

c. Ramp isolation check. The CE will lower the ramp until it rests on the qround and will place the ramp control handle in the STOP position. When the MP announces "Ramp isolation switch OFF," the CE will attempt to raise the ramp and will give the MP the appropriate response.

d. Bleed band closure check. The CE will position himself on the engine work platform where he can observe the enqine bleed band. He must continue to communicate with the MP and should turn his head away from the engine when keying the intercom. The CE will observe the opening and closing of the bleed band and will give the MP the appropriate response.

WARNING

When standing on the engine work platform with the engine operating, the CE must keep all clothing, tools, and body parts away from the engine inlet and bleed band areas.

e. Mechanical rig check. When called for by the MP, the CE will reconnect the electrical connectors on the DASH actuator.

REFERBNCE:

TM 55-1520-240-MTF

TASK: Perform tactical communication procedures and electronic counter-countermeasures.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given signal operation instructions.

STANDARDS:

1. Properly operate aircraft avionics.

2. Maintain radio discipline at all times.

3. Properly operate voice security equipment.

4. Correctly use SOI.

5. Correctly recognize and respond to enemy electronic warfare actions.

6. Correctly perform crew coordination actions.

DESCRIPTION: Electronic communications in a tactical environment should only be used when absolutely necessary. To eliminate confusion and reduce transmission time, crew members must use approved words, phrases, and codes. They must plan what to say before keying the transmitter. Crew members must transmit information clearly, concisely, and slowly enough to be understood by the receiving station. Ideally, transmissions should be kept under ten seconds. Crew members must not identify a unit or an individual by name during nonsecure radio transmissions.

a. Authentication. Use proper SOI procedures to authenticate all in-flight mission changes and artillery advisories when entering or departing a radio net or when challenged.

b. MIJI procedures. Keep accurate and detailed records of any MIJI incidents. Report the incident as soon as possible when a secure communications capability exists. Refer to Task 2091 for information on transmitting a tactical report.

NOTE: Adhere to positive flight-following procedures during tactical operations per the appropriate flight coordination center and the unit SOP.

REFERENCES:

DOD AIM 86-100
FM 1-103
FM 1-400
FM 24-35
FM 24-35-1
Task 2091
TM 11-5810-262-10
TM 11-5895-1199-12
TM 55-1520-240-10
Unit SOP

TASK: Transmit a tactical report.

CONDITIONS: In a CH-47 helicopter, a CH47FS, or orally in a classroom environment and given sufficient information to compile a tactical report.

STANDARDS:

1. Correctly transmit the report using the proper format.

2. Correctly perform crew coordination actions.

DESCRIPTION: Crew members must be able to give timely, concise reports. To save time, minimize confusion, and ensure completeness, the crew should report information in an established format. Standard formats for five different reports are given below.

a. **Spot report.** A spot report is used to report information about the enemy and area of operations.

(1) Call sign of observer.

(2) SALUTE.

(a) S--size.

(b) A--activity.

(c) L--location.

(d) U--unit (if known).

(e) T--time.

(f) E--equipment.

(3) What you are doing about it.

b. **Battle damage assessment.** The battle damage assessment is submitted by the observer following naval gunfire, artillery fire (if requested), or a tactical air strike.

ALFA: Call sign of observing source.
BRAVO: Location of target.
CHARLIE: Time strike started and ended.

DELTA: Percentage of target coverage (pertains to the percentage of projectiles that hit the target area).
ECHO: Itemized destruction.
FOXTROT: Remarks. (These may be omitted; however, they may contain additional information such as the direction the enemy may have taken in leaving the target area.)

a. Enemy shelling, bombing, or NBC warfare activity report. This report is submitted by the observer following enemy shelling, bombing, or NBC warfare activity.

ALFA: From (unit call sign) and type of report.
BRAVO: Position of observer (grid coordinates in code).
CHARLIE: Direction of attack measured clockwise from grid north or magnetic north (state which) in degrees or roils (state which).
DELTA: Time from (date-time of attack).
ECHO: Time to (for illumination time).
FOXTROT: Location of the area attacked. Use grid coordinates or place and state whether the location is actual or estimated.
GOLF: Number and type of guns, mortars, aircraft, or other means of delivery, if known.
HOTEL: Nature of fire (barrage, registration, and so on) or NBC-1 type of burst (air or surface) or type of toxic agent.
INDIA: Number and type of bombs, shells, rockets, and so on.
JULIETT: Flash-to-bang time in seconds.
KILO: If NBC-1 damage (in code) or crater diameter.
LIMA: If NBC-1, cloud width at H+5 minutes in degrees or roils.
MIKE: If NBC-1, stabilized cloud top or cloud bottom angle in degrees or roils or cloud top or bottom height in meters or feet at H+10 minutes.
NOVEMBER: If NBC-1, estimated yield sent as kilotons.

NOTE: State units of measure used such as meters and roils. For additional information, see FM 3-3. As a minimum, an NBC-1 report from an aerial observer requires the use of lines B and C and lines B and F if cloud width is reported.

d. Radiation dose-rate measurement NBC-4 report. This format is used frequently to report dose-rate measurements after the initial use of nuclear weapons. Lines Q, R, and S may be repeated as often as necessary. Radiation dose rates are measured in the open at one meter above the ground. If readings were taken elsewhere, specify in the message. For example, "In the center of a 4-foot deep fighting position with 6 inches of overhead." Other information may be included at the user's discretion.

QUEBEC:	Location of reading.
ROMEO:	Dose rate (rads per hour). The word initial, increasing, peak, or decreasing may be added.
SIERRA:	Date-time of reading (local or ZULU, state which).

e. MIJI report. Once jamming is discovered, report the interference as soon as practicable to higher headquarters.

Line 1:	Type of report (meaconing, intrusion, jamming, or interference).
Line 2:	Affected unit (call sign and suffix).
Line 3:	Location (your encrypted grid location).
Line 4:	Frequency affected (encrypted frequency).
Line 5:	Type of equipment affected (ultrahigh frequency, very high frequency, frequency modulated, beacon, and so on).
Line 6:	Type of interference (type of jamming and signal).
Line 7:	Strength of interference (strong, medium, or weak).
Line 8:	Time interference started and stopped (if continuing, so state).
Line 9:	Effectiveness of interference (estimate percentage of transmission blockage).
Line 10:	Operator's name and rank (self-explanatory).
Line 11:	Remarks (list anything else that may help identify-or locate the source of interference, and send it to higher headquarters by an alternate, secure means).

NOTE: Encryption is only required if information is transmitted by nonsecure means.

REFERENCES:

FM 1-116
FM 3-3
FM 3-100
FM 34-1
Unit SOP

CHAPTER 7

MAINTENANCE AIRCREW TASKS

This chapter describes those maneuvers and procedures that are essential for maintaining maintenance aircrew skills. Tasks will be performed for both training and evaluation. If discrepancies are found between this chapter and TM 55-1520-240-MTF, the technical manual takes precedence.

7-1. TASK CONTENTS

a. Task Number and Title. Each task is identified by a number and a title which correspond to the tasks in Chapter 5 (Figure 5-3).

b. Conditions. The conditions specify the situation in which the task is to be performed. They describe the important aspects of the performance environment. All conditions must be met before task iterations can be credited.

c. Standards. The standards describe the minimum degree of proficiency or standard of performance to which the task must be accomplished.

d. Description. The description explains how the task should be done to meet the standards. It includes individual and crew-coordinated actions that are to be performed as indicated by the MP (maintenance test pilot), P* (pilot on the controls), P (pilot not on the controls), and CE (crew chief or flight engineer). During maintenance test flights, the MP will be the PC.

e. References. The references listed for each task are sources of information about that particular task.

7-2. INDIVIDUAL AND CREW-COORDINATED ACTIONS

a. Individual Actions. These actions are the portions of a crew task that an individual must accomplish.

b. Crew-Coordinated Actions. These portions of a task require the interaction of the entire crew to ensure safe, efficient, and effective task execution.

TASK 2900

TASK: Perform prior-to-maintenance-test-flight checks.

CONDITIONS: In a CH-47 helicopter and given TMs 55-1520-240-CL and 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TMs 55-1520-240-CL and 55-1520-240-MTF.

2. Correctly review appropriate information on DA Form 2404 (Equipment Inspection and Maintenance Worksheet), DA Form 2408-12 (Army Aviator's Flight Record), and DA Form 2408-13 (Aircraft Inspection and Maintenance Record) for completeness.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The MP will review all forms and records to ensure that the aircraft is ready for the maintenance test flight.

2. The MP will ensure that the preflight inspection is properly conducted per TM 55-1520-240-CL or TM 55-1520-240-MTF. He may direct that the other crew member(s) inspect all or designated sections of the aircraft. The MP will verify that all preflight checks have been completed and appropriate information has been entered on DA Forms 2404, 2408-12, and 2408-13.

3. The other crew member(s) will complete the preflight inspection as directed. They will inform the MP whether the aircraft or assigned sections meet required preflight inspection criteria.

4. The MP will determine the maneuvers or checks necessary for the maintenance test flight. He will use any additional publications and references required. The MP will brief the aircrew and, if available, the ground crew concerning operations around or on the aircraft and will ensure that the ground communications capability is adequate. He will stress any safety considerations or procedures applicable to the flight.

5. The MP will ensure that a walk-around inspection is completed prior to flight.

REFERENCES:

Aircraft logbook
AR 95-1
DA Pamphlet 738-751
TM 1-1500-328-23
TM 55-1520-240-10
TM 55-1520-240-CL
TM 55-1520-240-MTF
TM 55-1520-240-PM

TASK 2901

TASK: Perform before-starting-engine checks.

CONDITIONS: In a CH-47 helicopter or a CH47FS before starting engines and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF.

2. The aircrew and, if available, the ground crew will announce when their checks are completed.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK: Perform LCT manual operation check.

CONDITIONS: In a CH-47 helicopter or a CH47FS during starting engine checks and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION: The MP will place the cyclic trim switch to MANUAL. He will check for proper equipment installation by retracting the LCT actuators, one at a time, to the fully retracted position while observing a corresponding indicator movement. The MP will check both actuators by fully extending the indicators and observing their full displacement within 25 seconds. He will place the cyclic trim switch to AUTO and observe that the indicators return to GND.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2905

TASK: Perform starting engine checks.

CONDITIONS: In a CH-47 helicopter or a CH47FS after the cockpit check and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF. He will announce when the checks are completed.

2. The P will announce when he initiates the engine start.

3. The P* will man the flight controls.

4. All crew members will clear the aircraft prior to the engine start.

REFERENCES:

AR 95-1
TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK: Perform AFCS evaluation.

CONDITIONS: In a CH-47 helicopter in flight and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce the checks in sequence.

2. The P* will stabilize the aircraft at 110 KIAS. The P and CE will assist the P* in clearing the aircraft.

3. The P will check the barometric altitude hold by engaging the switch and ensuring that the altitude varies less than 100 feet during the AFCS checks.

4. The P will identify the AFCS selector switch and go from BOTH to NO. 1. The P* will check to ensure that the aircraft stays in trim. If it does not, he will bring the aircraft back to trim and the P will measure the amount of pedal required. The P will place the AFCS selector switch back to BOTH and then to NO. 2. The P* will repeat the trim check.

5. The P* will check the pitch axis by displacing the cyclic without depressing the control centering button. He will increase airspeed to 120 knots and then allow the cyclic to return. (The airspeed should return to 110 knots.) The P* will repeat the procedure by decreasing the airspeed to 100 knots. He will check the pitch beep trim by operating the four-way switch fore and aft; the aircraft should respond with nose-up and nose-down attitude changes.

6. The P* will check the roll axis and coordinated turn capability by moving the cyclic without depressing the control centering button to effect a 20-degree angle of bank. He will

hold that bank angle for 60 degrees of turn and then will repeat the procedure in the opposite direction.

7. The P* will check the roll beep operation by moving the four-way switch to effect a 20-degree bank angle. He then will repeat the procedure in the opposite direction.

8. The P* will check the pitch and roll axis and the coordinated turn and roll beep in the Number 1 and Number 2 systems.

9. The P*/P will check the HSI select by using the cursor and depressing the appropriate buttons.

10. The P* will check the barometric altitude hold by slipping the thrust lever (without depressing the thrust trigger) to climb 75 feet and then releasing the thrust lever. He will repeat the procedure to decrease the altitude.

11. To conduct the DASH actuator low-rate operation check, the P will identify the AFCS selector switch. The P* will establish an airspeed of 110 knots. The P will turn the AFCS selector switch to OFF, and the P* will decrease airspeed to 90 knots. The P will turn the AFCS selector switch to BOTH and will check that the AFCS lights go out within 20 seconds. The P then will turn the AFCS selector switch to OFF. The P* will increase the airspeed to 110 knots. The P will turn the AFCS selector switch to BOTH and check that the AFCS lights go out within 20 seconds.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2922

TASK: Perform engine run-up checks.

CONDITIONS: In a CH-47 helicopter or a CH47FS after the engine start and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF.

2. The aircrew and, if available, the ground crew will announce when their checks are completed.

REFERENCES:

AR 95-1
TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2927

TASK: Perform AFCS function check.

CONDITIONS: In a CH-47 helicopter at a stabilized hover and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will bring the aircraft to a stabilized 15- to 20-foot hover. The P will observe the LCT indicators to ensure that they retract to the 0-60 range.

2. The crew will ensure that the aircraft is clear.

3. While the P* hovers the aircraft into the wind, the P will identify the AFCS selector switch and place it to NO. 1. The P will momentarily move the switch to OFF and then back to NO. 1 to check for engagement error. The P*/P will repeat the procedure for the Number 2 system.

4. The P* will check the pitch axis by displacing the cyclic, without depressing the control centering switch, to create a 3-degree, nose-high attitude. He then will allow the cyclic to return to the neutral position. The attitude of the aircraft should return to within 2 degrees of the original attitude. The P* will repeat the procedure in the opposite direction (nose-low attitude).

NOTE: During the AFCS function check, the P*/P must ensure that both the pilot's and copilot's pitch and roll trim switches are operational.

5. The P* will check the pitch beep trim by moving the four-way switch on the cyclic to the forward position. He should observe a small nose-down attitude change. The P* then will move the four-way switch to the aft position and should observe a small nose-up change.

6. The P* will check the roll axis by moving the four-way switch to the left and then to the right. He will ensure that there is a corresponding change in the aircraft attitude.

7. The P* will check the yaw axis by applying a 1/2 inch input to the pedals without operating the control centering switch. He will hold the input for 30 degrees of turn. After the P* returns the pedals to neutral, the aircraft should capture a new heading. The P* will repeat the procedure in the opposite direction. The P then will place the swivel switch to UNLOCK, and the P* will repeat the check. This time, the aircraft should not capture a new heading but should dampen out the input. The P then will place the swivel switch to LOCK.

8. The P* will check the heading hold and bank angle hold by displacing the cyclic, without operating the control centering switch, to produce sideward flight. The aircraft should maintain the commanded attitude and original heading. The P* then will repeat the procedure in the opposite direction.

9. The P*/P will repeat the procedures in 4 through 8 above for the Number 1 and Number 2 systems.

10. The P* will establish a 25- to 30-foot hover to check the radar altimeter hold function. The P will engage the radar altimeter hold function by depressing the radar altimeter hold button. The P* will slip the thrust to displace the aircraft 5 feet and then release the thrust. The P*/P will repeat the procedure in the opposite direction. The P will release the radar altimeter hold by depressing the radar altimeter hold button.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2929

TASK: Perform droop eliminator check.

CONDITIONS: In a CH-47 helicopter on the ground and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. With the aircraft on the ground and the thrust control in ground detent, the P will set the RRPM to 100 percent and match the torques.

2. The P* will smoothly raise the thrust control to bring the aircraft to a stabilized 10- to 15-foot hover.

3. The P will record the stabilized torque split and any change in RRPM.

4. All crew members will clear the aircraft.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2931

TASK: Perform torque differential check.

CONDITIONS: In a CH-47 helicopter on the ground and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly record the torque and N1 for each engine.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will move the Number 2 ECL from FLIGHT to GROUND and beep the RRPM to 100 percent. The P* will raise the thrust control until the forward landing gear are "light on the wheels," and the torque indication on the Number 1 engine is at least 60 percent. (The forward gear may come off the ground during this check.) The P will maintain RRPM at 100 percent.

2. The P will record the N1 and torque indications for the Number 1 engine.

3. The P will reduce RRPM to minimum beep and then return the Number 2 ECL to FLIGHT while maintaining a constant thrust position.

4. The P will move the Number 1 ECL from FLIGHT to GROUND and return the RRPM to 100 percent. He then will record the N1 and torque indications for the Number 2 engine.

5. The P will reduce RRPM to minimum beep, and the P* will lower the thrust control to ground detent. The P will return the Number 1 ECL to FLIGHT and the RRPM to 100 percent.

NOTE: The P*/P will use the Number 1 and Number 2 normal engine beep trim switch to make all changes in RRPM.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2932

TASK: Perform taxi checks.

CONDITIONS: In a CH-47 helicopter on a suitable surface with the engine run-up completed and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly perform ground taxi per Task 1015.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the aircraft.

2. The P*/P will check brake operation from both the pilot and copilot stations. The P will tell the P* to check the pilot brakes, one at a time, while he blocks the pedals. The P* will apply pressure on one pedal to ensure that it operates smoothly and that the brake does not fade. He then will check the other brake pedal in the same manner. The P will check the copilot brakes using the same procedure while the P* blocks the pilot pedals.

3. To check the power steering, the P* will remain focused outside the aircraft while the P performs the check. The P will place the swivel switch to STEER and move the turn knob left and then right to turn the aircraft 30 degrees. While the aircraft is turning, the P*/P will check their instruments for proper functioning. The P will allow the turn knob to return to center and check that the aircraft tracks properly. He also will set the swivel switch to LOCK and check that the aircraft tracks properly. The P will ensure that the steering control is inoperative with the swivel switch in LOCK.

REFERENCES:

Task 1015
TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK: Perform mechanical rig check.

CONDITIONS: In a CH-47 helicopter with the DASH actuator set to 36 inches and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will hover the aircraft crosswind. The P will ensure that the aircraft hovers within the prescribed parameters. The crew will ensure that the aircraft is clear.

2. The P* will return the aircraft to the ground and lower the thrust control to ground detent.

3. The P will identify the AFCS selector switch and place it to OFF.

4. The CE will reconnect the electrical connectors to the DASH actuators.

5. The P will identify the AFCS selector switch and place it to BOTH while observing that both AFCS caution lights go out.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2934

TASK: Perform baseline and normal engine health indicator test.

CONDITIONS: In a CH-47 helicopter or a CH47FS with the before-takeoff checks completed or orally in a classroom environment.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly fill out the baseline HIT work sheet.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. For a normal HIT, after determining the FAT, the CE will tell the P the N1 setting for each engine. The P will place the Number 2 ECL to GROUND. The P* will control the cyclic and the pedals and remain focused outside the aircraft while the P controls the thrust and engine beep. The P will set the RRPM at 100 percent and raise the thrust control until the appropriate N1 is reached. After the PTIT stabilizes, the P will call out the PTIT. The CE will inform the MP of the difference between the actual PTIT and the PTIT recorded in the HIT log.

2. For a baseline HIT, the MP will determine the N1 to be used from the baseline HIT work sheet and will enter the appropriate information on the work sheet. The crew will accomplish the baseline HIT like a normal HIT except the P will do the test three times and average the results.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2935

TASK: Perform control position check.

CONDITIONS: In a CH-47 helicopter at a stabilized hover with the AFCS function check completed and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the aircraft.

2. The P* will hover the aircraft crosswind. The P will determine the position of the LCT from the position indicator.

3. The P* will hover the aircraft into the wind. The P will measure the lateral cyclic and pedal positions.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2936

TASK: Perform before-hover checks.

CONDITIONS: In a CH-47 helicopter or a CH47FS after the run-up checks are completed and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the aircraft.

2. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF.

3. The P* will perform the ground instability check by setting the brakes and raising the thrust control to lift the front gear off the ground. He then will check aircraft response in all axes by making a slight input in the direction of each axis.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2949

TASK: Perform speed sweep checks.

CONDITIONS: In a CH-47 helicopter in flight with the before-takeoff checks completed and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will fly the airspeeds announced by the P. The P will take the appropriate measurements.

2. The P*/P will check their instruments as required.

3. The P* will check the aircraft for coordinated turn capability at 150 KIAS. The crew will clear in the direction of turn, and the P* will place the aircraft in a coordinated turn at 150 KIAS. The MP will analyze the one-per-revolution and the three-per-revolution vibrations of the aircraft.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2953

TASK: Perform LCT lift-off/retraction check.

CONDITIONS: In a CH-47 helicopter in flight and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Set the copilot's altimeter to 29.92.

3. Correctly record the PA and airspeed for LCT extension and retraction.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will stabilize the aircraft at 50 KIAS and then will increase the airspeed to 70 knots. The P and CE will assist the P* in clearing the aircraft. The P will record the PA and airspeed when the LCTs begin to come out of the lower box.

2. The P* will stabilize the aircraft at 150 KIAS. The P will check that the LCT indicators are fully extended. The P* will decrease the airspeed until the LCTs begin to come out of the upper box. The P then will record the PA and airspeed.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2954

TASK: Perform autorotation RPM check.

CONDITIONS: In a CH-47 helicopter at sufficient altitude for the power recovery prior to reaching 1,000 feet AGL and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Set the copilot's altimeter to 29.92.

3. Correctly check and record the fuel on board.

4. Correctly record PA, FAT, RRPM, and pedal split.

5. Maintain the aircraft within operating limits.

6. Complete the power recovery prior to reaching 1,000 feet AGL.

7. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The MP will brief the crew on the duties and procedures they should follow if an emergency occurs during the check.

2. The P will record the fuel on board, PA, and FAT at the altitude at which the RRPM will be checked.

3. The P* will establish an airspeed between 70 and 100 knots. He will ensure that an appropriate landing area is within reach and that the area below the aircraft is clear.

4. The P will record the peak RRPM at the selected altitude.

5. The P will announce that he is placing the emergency engine trim switches to MANUAL.

6. The P* will lower the thrust control to ground detent, and the P will simultaneously maintain the RRPM at 100 percent. The P will check the RRPM to ensure that it is not high and the

engine instruments to ensure that the engines are still operating. The P will tell the P* to place the thrust in the full-down position and hold it there. The P* will ensure that the aircraft is in trim. He must not allow the RRPM to exceed 108 percent. The P will record the appropriate information.

7. To initiate the power recovery, the P* will adjust thrust to return the RRPM to the normal range. The P will announce that he is placing the emergency engine trim switches, one at a time, to AUTO. The P* will maintain the RRPM in the normal range and complete the power recovery prior to reaching 1,000 feet AGL.

8. The MP will ensure that the recorded information meets the prescribed parameters.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2961

TASK: Perform self-tuning vibration absorber check.

CONDITIONS: In a CH-47 helicopter in flight and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will stabilize the aircraft at 120 KIAS. The P and CE will assist the P* in clearing the aircraft.

2. The P will increase the RRPM to 102 percent. The P*/P will check their STVAs.

3. The P* will increase the airspeed to 140 knots, and the P will decrease the RRPM to 98 percent. The P*/P will check their STVAs.

4. The P will increase the RRPM to 100 percent.

NOTE: The P*/P will use the Number 1 and Number 2 normal engine beep trim switch to make all changes in RRPM.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2963

TASK: Perform RRPM droop check and thrust rod slippage check.

CONDITIONS: In a CH-47 helicopter in flight and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will ensure that the RRPM is at 100 percent and will establish an airspeed of 125 knots. The P and CE will assist the P* in clearing the aircraft.

2. The P* will depress and hold the thrust trigger and will increase the airspeed to 140 knots.

3. The P will check the RRPM droop.

4. The P* will release the thrust trigger and check for torque changes.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK: Perform turbine engine analysis check.

CONDITIONS: In a CH-47 helicopter at an appropriate pressure altitude with the topping stop installed and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Set the copilot's altimeter to 29.92.

3. Correctly record PA, FAT, torque, Nl, and PTIT for the engine being topped.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

CAUTION

When the N2 actuators are in the maximum range, the P* must not lower the thrust control until the normal engine trim decreases the RRPM slightly. The droop eliminators are not effective at the maximum actuator range.

CAUTION

When a crew performs a TEAC with the Number 1 and Number 2 normal engine trim switch, both engine N2 actuators will be increased although the one engine is in GROUND. The crew must monitor the Number 1 and Number 2 normal engine trim switch when returning the ECL to FLIGHT to prevent exceeding the RRPM and engine limits.

1. The MP will brief the crew on the duties and procedures they should follow if an emergency occurs during the TEAC.

2. The P will set his altimeter to 29.92.

3. The P* will establish an airspeed of 120 knots at an altitude at which the engine can be topped. The P and CE will assist the P* in clearing the aircraft.

4. The P will move the ECL of the engine not being topped from FLIGHT to GROUND while maintaining the RRPM at 100 percent. The P* will increase the airspeed to a maximum of 140 knots while maintaining altitude. The P will maintain the RRPM at 100 percent with the Number 1 and Number 2 normal engine beep trim switch until the engine is topped and the RRPM begins to decrease. The P will inform the P* to lower the thrust control to return the RRPM to 100 percent.

5. The P* will raise the thrust control to reduce the RRPM to 98 percent. The P will ensure that the N1 does not increase and will record the appropriate information.

6. To recover to normal flight, the P* will lower the thrust control to regain the RRPM at 100 percent. The P will decrease the Number 1 and Number 2 normal engine beep switch until he observes a positive decrease in the torque and RRPM. He will return the ECL of the engine not being topped to FLIGHT while maintaining the RRPM at 100 percent.

7. If the other engine needs to be topped, the P*/P will use the same procedure.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK: Perform communication and navigation equipment checks.

CONDITIONS: In a CH-47 helicopter or orally in a classroom environment and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will read the appropriate communication and navigation checks.

2. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK 2967

TASK: Perform after-landing checks.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the aircraft.

2. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

TASK: Perform engine shutdown check.

CONDITIONS: In a CH-47 helicopter or a CH47FS and given TM 55-1520-240-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-240-MTF.

2. Correctly check and perform all items in sequence.

3. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will read all checks.

2. Each crew member will complete the required checks pertaining to his assigned crew station per TM 55-1520-240-MTF.

REFERENCES:

TM 55-1520-240-23 series
TM 55-1520-240-MTF
TM 55-1520-240-T series

CHAPTER 8

EVALUATION

This chapter describes evaluation principles and grading considerations. It also contains guidelines for conducting the hands-on performance test component of the APART, battle-rostered crew, proficiency flight, annual NVG standardization, post-accident, medical, and no-notice evaluations. The flight evaluation is a primary means of assessing flight standardization and crew member proficiency. It is, therefore, a key part of Army aviation standardization.

Section I. Evaluation Principles and Grading Considerations

8-1. EVALUATION PRINCIPLES

a. The evaluation must include the examinee's ability to perform essential hands-on tasks to the standards prescribed in Chapter 6 or Chapter 7. It also must include the examinee's ability to manage aircraft resources to successfully complete the assigned mission.

b. The guidelines for evaluating crew coordination are not based on objective criteria; for example, distances or degrees. Rather, they are based on a subjective analysis of how effectively a crew performs together to accomplish a series of tasks. The subjective analysis is as important as the objective evaluation of the more definitive measurable tasks. The evaluator measures crew coordination skills on the basis of subjective judgment, which is more difficult than objectively measuring the skill to accomplish a specific task.

c. Evaluation requires an analysis of how each crew member performs the crew coordination actions included in each ATM task. The evaluator must determine how effectively the examinee communicates and how effectively he sequences and times critical actions to successfully complete a task.

d. Evaluation of a crew member's communication skills should include an analysis of how well he understands current and planned actions. Does he communicate current and proposed tasks

effectively? Does he announce information before initiating a task so that the evaluator or other crew members are cued to perform their portion of the task?

e. In evaluating aircraft communication, the evaluator must determine how effectively the crew member uses standard aviation terminology. Use of this terminology is essential to ensure a clear, concise flow of information in the aircraft. The evaluator should correct any disuse or misuse of these terms on the spot to reinforce their proper usage.

f. The sequencing and timing of actions between crew members is critical. For example, the evaluator should expect the P* to forewarn him of planned maneuvers. As the P, the evaluator should announce his intentions to the P*. These announcements permit the proper sequencing of required follow-on actions. Failure to announce a task, such as a hovering turn in a confined area, could result in failure of the crew to provide clearing during the turn.

g. In all phases of individual instruction and evaluation, the evaluator is expected to perform as a crew member in good faith. At some point during the evaluation, circumstances may prevent the evaluator from performing as a crew member. In such cases, a realistic, meaningful, and planned method should be developed to effectively pass this task back to the examinee. In all other situations, the evaluator must perform as outlined in the task description or as directed by the examinee. The examinee must know that he is being supported by a fully functioning crew member.

h. The value of any evaluation depends on strict adherence to fundamental evaluation principles; anything less than strict adherence renders the evaluation meaningless. These fundamental principles are described below.

(1) The **evaluators** must be selected not only for their technical qualifications but also for their demonstrated performance, objectivity, and ability to observe and provide constructive comments.

(2) The **method** used to conduct the evaluation must be based on uniform, standard objectives. Also, the method used must be consistent with the unit's mission and must strictly adhere to the appropriate SOPs and regulations.

(3) All those concerned must completely understand the **purpose** of the evaluation. Moreover, the conduct of the evaluation must be purpose-oriented.

(4) Cooperation by all participants is necessary to guarantee accomplishment of the evaluation objectives. The emphasis is on all participants, not just on the examinee.

(5) The evaluation must produce **specific findings** to identify training needs. Everyone affected by the evaluation wants and needs to know what is being done wrong, what might be done better, and how improvements can be made. General comments do not always provide the direction and guidance essential for improvement. To serve its purpose, the evaluation must pinpoint both strengths and weaknesses.

8-2. GRADING CONSIDERATIONS

a. Oral Examination. The examinee must demonstrate a working knowledge and an understanding of the subject areas presented. The evaluator will assess the examinee's knowledge during the oral examination.

b. Flight Evaluation. Performance standards are based on an ideal situation. Grading is based on meeting the minimum standards. If other than ideal conditions exist during the evaluation, the evaluator must make appropriate adjustments to the standards.

Section II. Evaluation Guidelines

8-3. CREW MEMBER AND CREW FLIGHT EVALUATIONS

The flight evaluation determines the crew member's ability to perform appropriate tasks. For rated crew members, it is administered for the initial designation to the assigned duty position, when required, and at periodic intervals per AR 95-1. For nonrated crew members, the flight evaluation is administered as part of the APART and at periodic intervals per AR 95-1. Initial validation of an evaluator's orders at a new duty station will be conducted in the aircraft. The evaluation sequence consists of four phases. Phases 2 and 3 contain specific guidelines for conducting various aviation missions. The evaluator is the final authority on the amount of time devoted to each phase. If the evaluation is for a unit trainer or an evaluator, the recommended procedure is for the individual conducting the evaluation to reverse roles with the examinee during Phases 1, 2, and 3. When the evaluator uses this technique, the examinee must understand how the role-reversal will be conducted and when it will be in effect.

a. Phase 1--Introduction. In this phase, the evaluator--

(1) Introduces himself to the examinee.

(2) Ensures that the examinee has all the required equipment for the flight.

(3) Confirms the purpose of the flight evaluation, explains the evaluation procedure, and discusses the evaluation standards and criteria to be used.

NOTE 1: If the evaluation is for an evaluator, the individual conducting the evaluation must explain that he will evaluate the examinee's ability to apply the learning and teaching process outlined in the Instructor's Handbook.

NOTE 2: If the evaluation is for a unit trainer, it will emphasize the examinee's performance in those areas in which the examinee will perform UT duties.

b. Phase 2--Oral Examination. The examinee must have a working knowledge and an understanding of all applicable topics in the respective subject areas below. He must respond correctly to questions from topics selected by the evaluator. As a minimum, the evaluator will select two topics from each appropriate subject area. An IP, SP, IE, ME, FI, or SI also must demonstrate an ability to instruct and evaluate any topic. Aerodynamics, tactical and mission tasks, and night tasks are not required for instrument evaluations. Tactical and mission operations and night mission operations and employment do not apply to MP evaluations. Also, for MP evaluations, questions on aeromedical factors and aerodynamics will be at the discretion of the evaluator.

NOTE: The oral examination may include a discussion of any tasks listed on the crew member's task list.

(1) Regulations and publications (ARs 40-8. 95-1. 95-2, 95-3, and 385-95; DA Pamphlet 738-751; DOD FLIP; TCs 1-140 and 1-210; and local SOPs and requlations). Topics in this subject area are--

(a) ATP requirements.

(b) SOP requirements.

(c) DOD FLIP and maps.[1]

(d) VFR minimums and procedures.[1]

(e) IFR minimums and procedures.[1]

(f) Aviation life support equipment.

(g) Weight and balance requirements.

(h) Test flight weather requirements.[2]

(i) Local airspace usage (test flight).[2]

(j) Publications required in the aircraft.

(k) Maintenance test flight requirements.[2]

(l) Maintenance test flight forms and records.[2]

(m) Maintenance operational check requirements.[2]

(2) Operating limitations and restrictions (TC 1-140 and TM 55-1520-240-10). Topics in this subject area are--

(a) Aircraft systems limitations.

(b) Wind limitations.

(c) Rotor limitations.[1]

(d) Power limitations.[1]

(e) Slope limitations.[1]

(f) Engine limitations.[1]

(g) Weather limitations.[1]

(h) Pressure limitations.[1]

(i) Airspeed limitations.

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[1]Denotes topics that pertain to rated crew members only.
[2]Denotes topics that pertain to maintenance test pilots only.

(j) Temperature limitations.[1]

(k) Weight and balance limitations.

(l) Performance chart interpretation.[1]

(3) Aircraft emergency procedures and malfunctions (TM 55-1520-240-10). Topics in this subject area are--

(a) Emergency terms and their definitions.

(b) Emergency exits and equipment.

(c) Engine malfunctions.

(d) Rotor, transmission, and drive systems.

(e) Chip detectors.

(f) Fires and hot starts.

(g) Battery malfunctions.

(h) Smoke and fume elimination.

(i) Hydraulic system malfunctions.

(j) Fuel system malfunctions.

(k) Electrical system malfunctions.

(l) Landing and ditching procedures.

(m) Flight control malfunctions.

(4) Aeromedical factors (FM 1-301 and TC 1-204). Topics in this subject area include the effects of--

(a) Carbon monoxide.

(b) Middle ear discomfort.

(c) Self-imposed stresses.

(d) Spatial disorientation.

(5) Aerodynamics and aircraft characteristics (FM 1-203 and TM 55-1520-240-10).[1] **Topics in this subject area are--**

(a) Settling with power.

(b) Retreating blade stall.

(c) Tandem rotor attitude and heading control.

(6) Tactical and mission tasks (FMs 1-112, 1-116, 1-400, 1-402, 55-450-2, 55-450-3, 55-450-4, and 55-450-5; TCs 1-201 and 1-204; TM 55-1520-240-10; and the unit SOP). Topics in this subject area are--

(a) Mission equipment.

(b) Downed aircraft procedures.

(c) Terrain flight planning and safety.

(d) Interpretation of navigational charts, maps, and tactical overlays.[1]

(7) Night tasks (TC 1-204 and TM 55-1520-240-10). Topics in this subject area are--

(a) NVG limitations.

(b) Visual illusions.

(c) Night vision techniques.

(d) Distance estimation and depth perception.

(e) Dark adaptation and protection of night vision.

(8) Maintenance test flight troubleshooting and system operations (TM 55-1520-240-23 series,TM 55-1520-240-MTF, TM 55-1520-240-T series, and TM 55-2840-248-23.[2] Topics in this subject area are--

(a) Vibrations.

(b) Fuel system.

(c) Engine start.

(d) Power plant.

(e) Power train.

(f) Flight controls.

(g) Hydraulic system.

(h) Electrical system.

(i) Instrument indications.

(j) Engine performance check.

(k) Caution panel indications.

(l) Communication and navigation equipment.

e. Phase 3--Flight Evaluation. This phase consists of a briefing; a preflight inspection; engine-start and run-up procedures, engine ground operations, and before-takeoff checks; flight tasks; and engine-shutdown and after-landing tasks.

(1) Briefing. The evaluator will explain the flight evaluation procedure and tell the examinee which tasks he will perform. For unit trainers and evaluators, the individual conducting the evaluation must advise the examinee that he may deliberately perform some tasks not according to standard to check the examinee's diagnostic and corrective action skills. The evaluator will conduct or have the examinee conduct a crew briefing per Task 1000 (page 6-14). As a minimum. the briefing will include the items listed below.

(a) Mission.

(b) Weather.

(c) Flight route.

(d) Performance data.

(e) Postcrash rendezvous point.

(f) Transfer of flight controls.

(g) Simulated-engine-failure procedures.

(h) Crew duties, to include emergency duties.

(2) Preventive maintenance daily, preflight inspection, engine-start and run-up procedures, engine ground operations, and before-takeoff checks. The evaluator will evaluate the examinee's use of TM 55-1520-240-CL and/or TM 55-1520-240-MTF. He also will have the examinee properly identify at least two aircraft components and discuss their functions.

(3) Flight tasks. As a minimum, the evaluator will evaluate those tasks identified as mandatory in Chapter 5 and those mission/additional tasks selected by the commander for evaluation. He may randomly select for evaluation any other tasks listed on the task list established by the commander. An evaluator must demonstrate an ability to instruct or evaluate appropriate flight tasks. A unit trainer must demonstrate an ability to instruct topics in the areas in which he performs UT duties. When used as part of the proficiency flight evaluation, the evaluation may include an orientation of the local area, checkpoints, weather, and other pertinent information.

(4) Engine-shutdown and after-landing tasks. The evaluator will evaluate the examinee's use of TM 55-1520-240-CL and/or TM 55-1520-240-MTF.

d. Phase 4--Debriefing. During this phase, the evaluator will--

(1) Use the forms listed below, if applicable, to critique the examinee's performance.

(a) DA Form 4507-R (Standard Evaluation/Training Grade Slip).

(b) DA Form 4507-2-R (Continuation Comment Slip).

(c) DA Form 5051-5-R (Maintenance Test Flight Maneuvers Grade Slip (CH-47)).

(d) DA Form 5667-R (Maneuver/Procedure Grade Slip for CH-47 Crew Members).

(e) DA Form 7121-R (Battle-Rostered Crew Evaluation/Training Grade Slip).

(2) Discuss, with the examinee, the examinee's strengths and weaknesses.

(3) Offer the examinee recommendations for improvement.

(4) Tell the examinee whether he passed or failed the evaluation.

(5) Complete the applicable DA forms in (1) above per instructions in Chapter 9.

(6) Ensure that the examinee reviews and signs the applicable DA forms in (1) above per instructions in Chapter 9.

8-4. BATTLE-ROSTERED CREW EVALUATION

a. This evaluation is conducted to determine a crew's ability to perform all required tasks in the day mode and, if applicable, the NVG mode. (Only crew members in NVG-designated positions will be evaluated in the NVG mode.)

b. Evaluators must evaluate the crew during a mission to ensure that the crew members perform the tasks to standards. To observe a mission, the evaluator may use any combination of the methods described below, depending on assets and aircraft capabilities.

(1) Observation from a backseat in the aircraft.

(2) Observation from another aircraft as wingman during multiaircraft operations.

(3) Review of video tapes after a mission.

(4) Debriefing and interrogation of the crew.

c. When the crew has demonstrated proficiency in all crew tasks, both during the day and with the NVG (if applicable), and the unit commander is satisfied that the crew has met the standards for each task, he will certify the crew as CRL 1. The evaluator will use DA Form 7121-R to record the evaluation results.

d. Crews must be evaluated at least annually within the 90 days that precede the anniversary of their certification. No-notice evaluations are encouraged. Crews will be decertified if they do not meet CRL 1 requirements stated in TC 1-210.

8-5. PROFICIENCY FLIGHT EVALUATION

This evaluation is administered per TC 1-210, using guidelines established by the commander. After the evaluation, the evaluator will debrief the examinee and complete DA Forms 4507-R, 4507-2-R (if applicable), 5051-5-R (if applicable), 5667-R, and 7121-R per instructions in Chapter 9. A proficiency flight evaluation is conducted to determine--

a. An individual's proficiency when questioned by the commander.

b. An individual's proficiency when the individual's currency has lapsed per AR 95-1.

c. Which readiness level is appropriate for an individual to enter upon unit assignment if a records check alone is not sufficient to determine the level.

8-6. ANNUAL NVG STANDARDIZATION FLIGHT EVALUATION

This evaluation is conducted per TC 1-210 using this ATM and the Commander's Task List. After the evaluation, the evaluator will debrief the examinee and complete DA Forms 4507-R, 4507-2-R (if applicable), 5667-R, and 7121-R per instructions in Chapter 9.

8-7. POSTACCIDENT FLIGHT EVALUATION

This evaluation is required by AR 95-1. The type and nature of the evaluation depend on the crew duties the crew member was performing at the time of the accident. Emphasis should be placed on evaluating the task which was being performed at the time of the accident under similar conditions, if possible. Safe operating practices must never be sacrificed in an attempt to recreate the conditions that existed at the time of the accident. After the evaluation, the evaluator will debrief the examinee and complete DA Forms 4507-R, 4507-2-R (if applicable), 5051-5-R (if applicable), and 5667-R per instructions in Chapter 9.

8-8. MEDICAL FLIGHT EVALUATION

This evaluation is conducted per AR 95-1. The evaluator, on the recommendation of the flight surgeon, will require the examinee to perform a series of tasks most affected by the examinee's disability. The evaluation should measure the examinee's potential to perform ATM tasks despite his disability. It should not be based on current proficiency.

a. After the examinee has completed the medical flight evaluation, the evaluator will prepare a memorandum. The memorandum will include--

(1) A description of the environmental conditions under which the evaluation was conducted; for example, day, night, or overcast.

(2) A list of tasks performed during the evaluation.

(3) A general statement of the individual's ability to perform with the disability and under what conditions he can perform.

b. The unit commander will then forward the memorandum and DA Forms 4507-R, 4507-2-R (if applicable), 5051-5-R (if applicable), and 5667-R to Commander, US Army Aviation Center, ATTN: HSXY-AER, Fort Rucker, AL 36362-5333.

8-9. NO-NOTICE EVALUATION

The commander directs the no-notice evaluation and administers it using the guidelines in paragraph 8-3. The evaluation is used to determine the crew member's and crew's proficiency and to provide the commander an indication of the status of his training program. It may be an oral, a written, or a flight evaluation (or any combination or portion of the three) as directed by the commander. After the evaluation, the evaluator will debrief the crew member or crew and complete DA Forms 4507-R, 4507-2-R (if applicable), 5051-5-R (if applicable), 5667-R, and 7121-R per instructions in Chapter 9.

CHAPTER 9

AIRCREW GRADING SYSTEM

The aircrew grading system provides the commander a complete and continuous performance record on each crew member in his unit. These records reflect the performance of individuals at a given moment in time. Poor performance may or may not indicate inadequacy on the part of the crew member. The problem may be with the unit training program itself. A detailed analysis of all records should tell the commander where the problem is. Only then should he attempt to fix it. Five separate forms are used for evaluation or training flights. Blank copies of these forms are at the back of this training circular. They may be reproduced locally on 5 1/2- by 8-inch paper. The importance of these records to the commander as quality control and standardization tools cannot be overstated. They must be filled out carefully, completely, and legibly (printed in dark blue or black ink).

9-1. DA FORM 4507-R (STANDARD EVALUATION/TRAINING GRADE SLIP)

This form is used to record information about evaluations or training. It consists of two pages and is identical for all Army aircraft or simulation devices. Figures 9-1 and 9-2 (pages 9-3 and 9-4) show a sample of a completed DA Form 4507-R. Instructions for completing this form are given below.

a. Examinee/Trainee and Evaluator/Instructor. Required entries are self-explanatory. Show last names first.

b. Flight Time Data.

(1) Total hours. Enter total hours (fixed-wing or rotary-wing) if required by local directives.

(2) Purpose. Circle evaluation or training. If evaluation, write in the specific purpose of the evaluation flight; for example, proficiency flight evaluation.

NOTE: UTs must circle training in the purpose block.

(3) Time today and cumulative time. Enter flight time today at the completion of the evaluation or training flight. Use the cumulative time block to record accrued flight training time. When more than one flight period is required for the evaluation, enter the accrued evaluation time.

(4) Seat. Enter LS for left seat or RS for right seat for rated crew members, and enter NA for nonrated crew members.

(5) Type aircraft, crew duty, type of training, and time flown. Enter the type of aircraft, and place an X in the appropriate blocks. Circle NVG or NVS, as appropriate, when the type of training includes a night vision device. (If the type of training or crew duty position is other than that shown, specify in the space provided.) Enter the time flown in the block below each applicable condition; that is, day, night, hood, WX, simulator, NVG, and NVS.

c. Evaluator/Instructor Recommendations. Place an X in the appropriate blocks, and circle the applicable items. If the crew duty position is other than that shown, specify in the space provided. Use the comment slip on the back of the form to explain unsatisfactory performance, referencing the appropriate maneuver or procedure number from DA Form 5051-5-R or DA Form 5667-R. Recommended additional training also may be listed on the back of the form, even though all maneuvers and procedures may have been performed satisfactorily. Use DA Form 4507-2-R if additional space is needed. After completing the evaluation or training--

(1) Debrief the examinee or trainee and inform him of his status.

(2) Sign in the space provided on the front of the form and on the first unused line after the comments on the back.

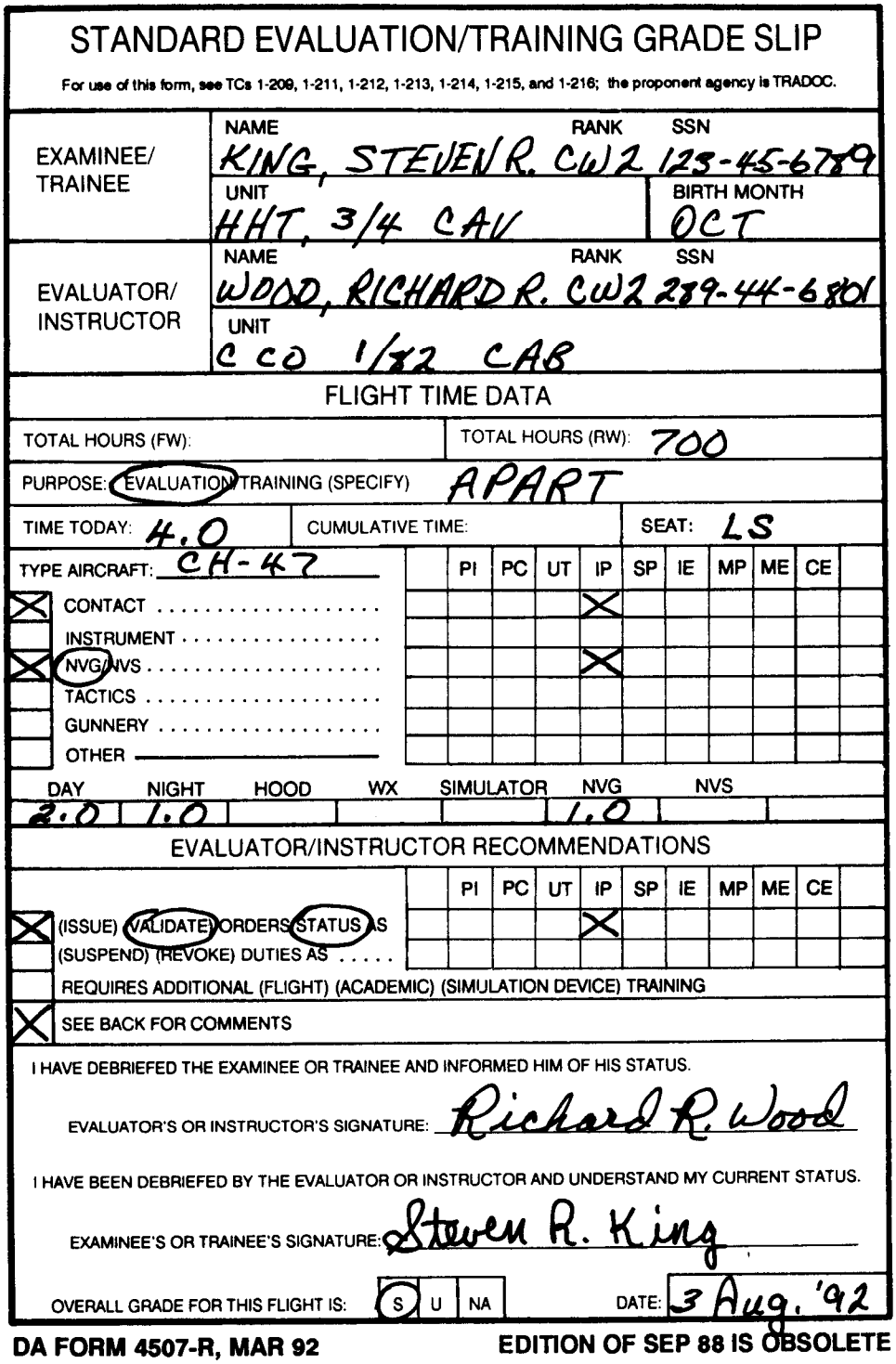
(3) Obtain the examinee's or trainee's signature on the front of the form and beside your signature on the comment slip. (By signing the form, the examinee or trainee acknowledges that he has been debriefed. His signature does not mean that he concurs or nonconcurs with the results.)

(4) Circle S, U, or NA to indicate the overall grade for the flight based on considerations below. Then enter the date.

(a) During training flights, individual maneuvers or procedures may be graded unsatisfactory (U) without resulting in an overall grade of unsatisfactory.

(b) When used to develop an individual training program, the proficiency flight evaluation may be ungraded (NA).

(c) During any evaluation flight except for (b) above, failure of any maneuver or procedure will result in an overall grade of unsatisfactory (U). When the examinee or trainee is reevaluated, the maneuvers or procedures graded unsatisfactory, as a minimum, must be evaluated again.



STANDARD EVALUATION/TRAINING GRADE SLIP

For use of this form, see TCs 1-209, 1-211, 1-212, 1-213, 1-214, 1-215, and 1-216; the proponent agency is TRADOC.

	NAME	RANK	SSN
EXAMINEE/ TRAINEE	KING, STEVEN R.	CW2	123-45-6789
	UNIT: HHT, 3/4 CAV	BIRTH MONTH: OCT	
EVALUATOR/ INSTRUCTOR	NAME: WOOD, RICHARD R.	RANK: CW2	SSN: 289-44-6801
	UNIT: C CO 1/82 CAB		

FLIGHT TIME DATA

TOTAL HOURS (FW): | TOTAL HOURS (RW): 700

PURPOSE: (EVALUATION) TRAINING (SPECIFY) APART

TIME TODAY: 4.0 | CUMULATIVE TIME: | SEAT: LS

TYPE AIRCRAFT: CH-47

	PI	PC	UT	IP	SP	IE	MP	ME	CE
[X] CONTACT				X					
[ ] INSTRUMENT									
[X] (NVG)/NVS				X					
[ ] TACTICS									
[ ] GUNNERY									
[ ] OTHER									

DAY	NIGHT	HOOD	WX	SIMULATOR	NVG	NVS
2.0	1.0				1.0	

EVALUATOR/INSTRUCTOR RECOMMENDATIONS

	PI	PC	UT	IP	SP	IE	MP	ME	CE
[X] (ISSUE) (VALIDATE) ORDERS (STATUS) AS				X					
[ ] (SUSPEND) (REVOKE) DUTIES AS									

[ ] REQUIRES ADDITIONAL (FLIGHT) (ACADEMIC) (SIMULATION DEVICE) TRAINING

[X] SEE BACK FOR COMMENTS

I HAVE DEBRIEFED THE EXAMINEE OR TRAINEE AND INFORMED HIM OF HIS STATUS.

EVALUATOR'S OR INSTRUCTOR'S SIGNATURE: Richard R. Wood

I HAVE BEEN DEBRIEFED BY THE EVALUATOR OR INSTRUCTOR AND UNDERSTAND MY CURRENT STATUS.

EXAMINEE'S OR TRAINEE'S SIGNATURE: Steven R. King

OVERALL GRADE FOR THIS FLIGHT IS: (S) U NA DATE: 3 Aug. '92

DA FORM 4507-R, MAR 92 EDITION OF SEP 88 IS OBSOLETE

Figure 9-1. Sample of a completed DA Form 4507-R (front)

COMMENT SLIP

THIS HAS BEEN A SATISFACTORY APART IP EVALUATION.
Steven R. King Richard R. Wood

PAGE 2, DA FORM 4507-R, MAR 92

Figure 9-2. Sample of a completed DA Form 4507-R (back)

9-2. DA FORM 4507-2-R (CONTINUATION COMMENT SLIP)

This form is used to continue comments from the back of DA Form 4507-R. It consists of two pages and is identical for all Army aircraft or simulation devices. Figures 9-3 and 9-4 (pages 9-6 and 9-7) show a sample of a completed DA Form 4507-2-R. When completing this form, use the procedure in paragraph 9-lc. When all forms have been completed, staple them together.

9-3. DA FORM 5667-R (MANEUVER/PROCEDURE GRADE SLIP FOR CH-47 CREW MEMBERS)

This form, which consists of two pages, lists the base and mission tasks shown in Chapter 5. Blank spaces are provided to list additional tasks designated by the commander. Figures 9-5 and 9-6 (pages 9-8 and 9-9) show a sample of a completed DA Form 5667-R. The evaluator or instructor should carry this form during the evaluation or training flight. Instructions for completing this form are given below.

a. Enter the examinee's or trainee's name (last name first) and the date.

b. Enter either S or U in the grade (GR) block after the examinee or trainee completes each maneuver or procedure.

c. Enter D in the grade block if the task is demonstrated and the crew member is unable to practice it for some reason.

d. Place a diagonal in the grade blocks for all maneuvers or procedures not evaluated. An alternative method is to place a diagonal in the first and last unused blocks and draw a vertical line connecting the two diagonals. Use this method when three or more consecutive maneuvers or procedures are not graded.

e. Enter sound, objective comments, referencing the appropriate maneuver or procedure number, on the back of DA Form 4507-R or, if additional space is needed, on DA Form 4507-2-R. These comments are important for reference by other instructors or evaluators during future training or evaluation.

f. Sign the form in the first unused block.

NOTE: Tasks with circles are mandatory for standardization flight evaluations. Tasks with squares are mandatory for instrument flight evaluations. Tasks with diamonds are mandatory for NVG standardization flight evaluations. Tasks with (RCM) after their titles are for RCMs only. Tasks with (NCM) after their titles are for NCMs only.

CONTINUATION COMMENT SLIP

For use of this form, see TCs 1-209, 1-211, 1-212, 1-213, 1-214, 1-215, and 1-216; the proponent agency is TRADOC

Examinee's/Trainee's Name: KING, STEVEN R. Date: 3 Aug. 92

THIS FORM IS USED TO CONTINUE COMMENTS FROM THE BACK OF DA FORM 4507-R.

Steven R. King Richard R. Wood

DA FORM 4507-2-R, MAY 87

Figure 9-3. Sample of a completed DA Form 4507-2-R (front)

CONTINUATION COMMENT SLIP

THIS FORM IS USED TO CONTINUE COMMENTS FROM THE BACK OF DA FORM 4507-R.
Steven R. King Richard R. Wood

DA FORM 4507-2-R, MAY 87 Page 2

Figure 9-4. Sample of a completed DA Form 4507-2-R (back)

MANEUVER/PROCEDURE GRADE SLIP FOR CH-47 CREW MEMBERS
For use of this form,see TC 1-216; the proponent agency is TRADOC.

Examinee's/Trainee's Name KING, STEVEN R. Date 3AUG 92

Instructor or evaluator will sign in the first unused block.

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
①	CREW MISSION BRIEFING	S	㉔	FLIGHT WITH AFCS OFF (RCM)	S
②	VFR FLIGHT PLANNING (RCM)	S	㉕	CRUISE CHECK PROCEDURES	S
3	IFR FLIGHT PLANNING (RCM)		㉖	EMERGENCY PROCEDURES	S
4	DD FORM 365-4		27	PASSENGER BRIEFING	
⑤	DA FORM 4887-R (RCM)	S	28	INSTRUMENT TAKEOFF (RCM)	
⑥	PREFLIGHT INSPECTION	S	29	RADIO NAVIGATION (RCM)	
⑦	MAINT INSPECTION (NCM)		30	HOLDING PROCEDURES (RCM)	
⑧	ENGINE-START THROUGH BEFORE-TAKEOFF CHECKS	S	31	UNUSUAL ATTD RECOVERY (RCM)	S
⑨	ACFT SECURITY CHECK (NCM)		32	RADIO COMM/INTERCOM PROCEDURES	S
⑩	AIRCRAFT CLEARANCE AND AIRSPACE SURVEILLANCE	S	33	TWO-WAY RADIO FAILURE (RCM)	
			34	NONPRECISION APPROACH	
⑪	GROUND TAXI	S	35	PRECISION APPROACH	
⑫	HOVER POWER CHECK	S	㊱	INADVERTENT IMC PROCEDURES/VHIRP (RCM)	S
⑬	HOVERING FLIGHT	S			
⑭	VMC TAKEOFF	S	㊲	AFTER-LANDING TASKS	S
15	TRAFFIC PATTERN FLIGHT	S	㊳	MARK XII IFF SYSTEM	S
16	PILOTAGE AND DEAD RECKONING (RCM)		39	PINNACLE OR RIDGELINE OPERATION	
⑰	DOPPLER/OMEGA NAV (RCM)	S	40	FM RADIO HOMING	
⑱	BEFORE-LANDING CHECK	S	41	AERIAL OBSERVATION	
⑲	VMC APPROACH	S	42	EVASIVE MANEUVERS	
⑳	ROLL-ON LANDING	S	43	MULTIAIRCRAFT OPERATIONS	
㉑	SLOPE OPERATIONS	S	44	PARADROP OPERATIONS	
㉒	HOT/CLOSED CIRCUIT REFUELING (NCM)		45	EXTERNAL LOAD OPERATIONS	
			46	INTERNAL LOAD OPERATIONS	
㉓	SIMULATED ENG FAILURE AT ALTITUDE	S	47	AIRCRAFT SURVIVABILITY EQUIPMENT	

DA FORM 5667-R, AUG 92 EDITION OF NOV 87 IS OBSOLETE

Figure 9-5. Sample of a completed DA Form 5667-R (front)

MANEUVER/PROCEDURE GRADE SLIP FOR CH-47 CREW MEMBERS					
NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
48	EMERGENCY PROCEDURES FOR NVG FAILURE	S			
49	ARMAMENT SUBSYSTEM (NCM)	/			
50	LANDING AREA RECON	S			
51	TERRAIN FLT MSN PLANNING	S			
52	TERRAIN FLIGHT NAVIGATION	S			
53	TERRAIN FLIGHT TAKEOFF	S			
54	TERRAIN FLIGHT	S			
55	TERRAIN FLIGHT APPROACH	S			
56	MASKING AND UNMASKING	S			
57	TERRAIN FLIGHT DECEL	S			
58	MAINT TEST FLIGHT (NCM)	/			
59	TACTICAL COMM/ECCM (RCM)	/			
60	TACTICAL REPORT	S			
61	ORAL EVALUATION	S			
	Richard R. Wood				

PAGE 2, DA FORM 5667-R, AUG 92

Figure 9-6. Sample of a completed DA Form 5667-R (back)

9-4. DA FORM 5051-5-R (MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (CH-47))

This form provides a record of evaluation and training conducted at the unit level. It addresses those maneuvers and procedures required in the performance of maintenance test flights. DA Form 5051-5-R is an important tool in attaining standardization and quality control. It should be filled out correctly and legibly. Figure 9-7 shows a sample of a completed DA Form 5051-5-R. The evaluator or instructor should carry this form during the evaluation or training flight. Instructions for completing this form are given below.

a. Enter the examinee's or trainee's name (last name first) and the date.

b. Enter either S or U in the grade (GR) block after the examinee or trainee completes each maneuver or procedure.

c. Enter D in the grade block if the task is demonstrated and the crew member is unable to practice it for some reason.

d. Place a diagonal in the grade blocks for all maneuvers or procedures not evaluated. An alternative method is to place a diagonal in the first and last unused blocks and draw a vertical line connecting the two diagonals. Use this method when three or more consecutive maneuvers or procedures are not graded.

e. Enter sound, objective comments, referencing the appropriate maneuver or procedure number, on the back of DA Form 4507-R or, if additional space is needed, on DA Form 4507-2-R. These comments are important for reference by other instructors or evaluators during future training or evaluation.

f. Sign the form in the first unused block.

MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (CH-47)

For use of this form, see TC 1- 216; the proponent agency is TRADOC.

Examinee's / Trainee's Name KING, STEVEN R. Date 3 AUG 92

Instructor or evaluator will sign in the first unused block

NO	MANEUVER/ PROCEDURE	GR
1	PRIOR-TO-MAINTENANCE-TEST-FLIGHT CHECKS	S
2	BEFORE-STARTING-ENGINE CHECKS	S
3	LCT MANUAL OPERATION CHECK	S
4	STARTING ENGINE CHECKS	S
5	AFCS EVALUATION	S
6	ENGINE RUN-UP CHECKS	S
7	AFCS FUNCTION CHECK	S
8	DROOP ELIMINATOR CHECK	S
9	TORQUE DIFFERENTIAL CHECK	S
10	TAXI CHECKS	S
11	MECHANICAL RIG CHECK	T
12	BASELINE AND NORMAL ENGINE HEALTH INDICATOR TEST	T
13	CONTROL POSITION CHECK	T
14	BEFORE-HOVER CHECKS	S
15	SPEED SWEEP CHECKS	S
16	LCT LIFT-OFF/RETRACTION CHECK	S
17	AUTOROTATION RPM CHECK	S
18	SELF-TUNING VIBRATION ABSORBER CHECK	S
19	RRPM DROOP CHECK AND THRUST ROD SLIPPAGE CHECK	S
20	TURBINE ENGINE ANALYSIS CHECK	S
21	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	S
22	AFTER-LANDING CHECKS	S
23	ENGINE SHUTDOWN CHECK	S
24	ORAL EVALUATION	S
25	Richard R. Wood	
26		
27		
28		
29		
30		
31		
32		
33		

NOTE: ITEMS 25 THROUGH 33 INTENTIONALLY LEFT BLANK FOR LATER USE.

DA FORM 5051-5-R, AUG 92 EDITION OF JUL 90 IS OBSOLETE.

Figure 9-7. Sample of a completed DA Form 5051-5-R

9-5. DA FORM 7121-R (BATTLE-ROSTERED CREW EVALUATION/TRAINING GRADE SLIP)

This form is used to record information about battle-rostered crew evaluations and training. It consists of two pages and is identical for all Army aircraft or simulation devices. Figures 9-8 and 9-9 (pages 9-14 and 9-15) show a sample of a completed DA Form 7121-R. Instructions for completing this form are given below.

a. Battle-Rostered Crew Examinees/Trainees and Evaluator/Instructor. Fill in the names and ranks of the PC and PI in the space provided. Enter the duty symbols, names, and ranks of the nonrated crew members in the space provided. Then enter the unit of the crew. Required entries in the evaluator/instructor block are self-explanatory. Show last names first.

b. Crew Data.

(1) Total battle-rostered crew hours. Enter the total hours flown as a battle-rostered crew.

(2) Date designated a battle-rostered crew. Enter the CRL 1 certification date.

(3) Purpose. Circle evaluation or training. If evaluation, write in the specific purpose of the evaluation flight; for example, no-notice.

(4) Time today and cumulative time. Enter flight time today at the completion of the evaluation or training flight. Use the cumulative time block to record accrued flight training time. When more than one flight period is required for the evaluation, enter the accrued evaluation time.

(5) Type of aircraft, crew tasks, mode of flight, and time flown. Enter the type of aircraft. For crew tasks evaluated, enter either S or U in the space provided and circle the appropriate mode of flight. Enter the time flown in the block below each applicable condition; that is, day, night, WX, simulator, NVG, and NVS.

c. Evaluator/Instructor Recommendations. Enter an X in the box, and circle the appropriate status of crew qualifications. If the crew requires additional training, place an X in the appropriate box and circle the type of training. Enter an X in the box provided if comments are on the back. Use the space on the back to explain unsatisfactory performance, referencing the

appropriate crew task. Recommended additional training also may be listed on the back, even though the crew tasks were performed satisfactorily. After completing the evaluation--

(1) Debrief the examinees or trainees and inform them of their status.

(2) Sign in the space provided on the front of the form and on the first unused line after the comments on the back.

(3) Obtain the PC's, PI's, and nonrated crew members' signatures on the front of the form and beside your signature after the comments on the back. (By signing the form, the crew members acknowledge that they have been debriefed. Their signatures do not mean that they concur or nonconcur with the results.)

(4) Circle S, U, or NA to indicate the overall grade for the flight based on the considerations below. Then enter the date.

(a) During training flights, individual maneuvers or procedures may be graded unsatisfactory (U) without resulting in an overall grade of unsatisfactory.

(b) When used to develop a crew training program, the proficiency flight evaluation may be ungraded (NA).

(c) During any evaluation flight, an unsatisfactory grade (U) for an individual crew member will result in an overall grade of unsatisfactory for the crew. When the crew is reevaluated, the tasks graded unsatisfactory, as a minimum, must be evaluated again.

BATTLE-ROSTERED CREW EVALUATION/TRAINING GRADE SLIP

For use of this form, see TC 1-209 and TCs 1-211 through 1-219; the proponent agency is TRADOC.

	NAME	RANK
BATTLE-ROSTERED CREW EXAMINEES/ TRAINEES	PC: JAMES, WINDOM J.	CW4
	PI: GOSSARD, JAY J.	CW3
	NONRATED CREW MEMBERS	
	DUTY SYMBOL / NAME / RANK	
	FE NIETSCHE, FRED D.	SFC
	CE BACH, JOHANN S.	SSG
	UNIT:	
EVALUATOR/ INSTRUCTOR	NAME: YAEGER, CHARLES E.	RANK: CPT
	UNIT: B CO 1-282 AVN	

CREW DATA

TOTAL BATTLE-ROSTERED CREW HOURS: 30	DATE DESIGNATED A BATTLE-ROSTERED CREW: 3 Aug 92
PURPOSE: (EVALUATION)/TRAINING NO-NOTICE	
TIME TODAY: 2.0	CUMULATIVE TIME:

TYPE AIRCRAFT: CH-47

CREW TASK 1	S D/N/(NVD)	CREW TASK 6	D/N/NVD
CREW TASK 2	S D/N/(NVD)	CREW TASK 7	D/N/NVD
CREW TASK 3	S D/N/(NVD)	CREW TASK 8	S D/N/(NVD)
CREW TASK 4	D/N/NVD	CREW TASK 9	D/N/NVD
CREW TASK 5	S D/N/(NVD)	CREW TASK 10	D/N/NVD

DAY	NIGHT	WX	SIMULATOR	NVG	NVS	
				2.0		

EVALUATOR/INSTRUCTOR RECOMMENDATIONS

- [x] (ISSUE) (VALIDATE) CREW QUALIFICATIONS
- [ ] (SUSPEND) (REVOKE) CREW QUALIFICATIONS
- [ ] REQUIRES ADDITIONAL (FLIGHT) (ACADEMIC) (SIMULATION DEVICE) TRAINING
- [x] SEE BACK FOR COMMENTS

I HAVE DEBRIEFED THE EXAMINEES/TRAINEES AND INFORMED THEM OF THEIR STATUS.

EVALUATOR'S/INSTRUCTOR'S SIGNATURE: Charles E. Yaeger

WE HAVE BEEN DEBRIEFED BY THE EVALUATOR/INSTRUCTOR AND UNDERSTAND OUR CURRENT STATUS.

PC'S SIGNATURE: Windom J. James

PI'S SIGNATURE: Jay J. Gossard

NONRATED CREW MEMBERS' SIGNATURES: Fred D. Nietsche

Johann S. Bach

OVERALL GRADE FOR THIS FLIGHT IS: (S) U NA DATE: 26MAR92

DA FORM 7121-R, MAR 92

Figure 9-8. Sample of a completed DA Form 7121-R (front)

COMMENTS

THIS HAS BEEN A SATISFACTORY NO-NOTICE CREW EVALUATION FOR CW4 JAMES, CW3 GOSSARD, SFC NIETSCHE, AND SSG BACH.

Windom J. James — Charles E. Yaeger

Jay J. Gossard

Fred D. Nietsche

Johann S. Bach

Page 2, DA FORM 7121-R, MAR 92

Figure 9-9. Sample of a completed DA Form 7121-R (back)

GLOSSARY

acft	aircraft
ADF	automatic direction finder
APB	Air Force Base
AFCs	advanced flight control system
AGL	above ground level
AHO	above highest obstacle
AIM	Airman's Information Manual
AL	Alabama
ALSE	aviation life support equipment
ammo	ammunition
ANVIS	aviator's night vision imaging system
APART	annual proficiency and readiness test
APU	auxiliary power unit
AR	Army regulation
ARNG	Army National Guard
ASE	aircraft survivability equipment
ASR	airport surveillance radar
ATC	air traffic control
ATM	aircrew training manual
ATP	aircrew training program
attd	attitude
ATTN	attention
auto	automatic
AUX	auxiliary
avail	available
avn	aviation
C	Celsius
CAB	combat aviation brigade
cal	calibrated
cav	cavalry
CDI	course deviation indicator
CE	crew chief
CG	center of gravity
CH	cargo helicopter
CH47FS	CH-47 flight simulator
CL	checklist
co	company
comm	communication
cent	continuous
CONUS	continental United States
CRL	crew readiness level

D	day; demonstrated (for grade slip purposes)
DA	Department of the Army
DASH	differential airspeed hold
DC	District of Columbia
DD	Department of Defense
decel	deceleration
DOD	Department of Defense
DSN	Defense Switching Network
ECCM	electronic counter-countermeasures
ECL	engine condition lever
EGT	exhaust gas temperature
emerg	emergency
eng	engine
equip	equipment
ETA	estimated time of arrival
ETE	estimated time en route
ETL	effective translational lift
ETP	exportable training packet
F	Fahrenheit
FAA	Federal Aviation Administration
FAC	flight activity category
FAR	Federal Aviation Regulations
FARP	forward arming and refueling point
FAT	free air temperature
FE	flight engineer
FI	flight engineer instructor
FIH	Flight Information Handbook
FLIP	flight information publication
flt	flight
FM	field manual or frequency modulated
FPM	feet per minute
FW	fixed wing
GA	Georgia
gnd	ground
GR	grade
GWT	gross weight
HHT	headquarters and headquarters troop
HIT	health indicator test
HQ	headquarters
HQDA	Headquarters, Department of the Army
hr	hour
HSI	horizontal situation indicator
IAS	indicated airspeed
ICAO	International Civil Aviation Organization
ICS	intercommunications system

ID	identification
IE	instrument flight examiner
IFF	identification, friend or foe (radar)
IFR	instrument flight rules
IGE	in-ground effect
ILS	instrument landing system
IMC	instrument meteorological conditions
incl	included
ind	indicated
IP	instructor pilot
KIAS	knots indicated airspeed
KTAS	knots true airspeed
lb	pound(s)
LCT	longitudinal cyclic trim
LOC	localizer
LS	left seat
maint	maintenance
MAP	missed approach point
max	maximum
MD	Maryland
ME	maintenance test flight evaluator
METL	mission essential task list
METT-T	mission, enemy, terrain, troops, and time available
MG	machine gun
MIJI	meaconing, intrusion, jamming, and interference
min	minimum
mm	millimeter
MOPP	mission-oriented protective posture
MP	maintenance test pilot
msn	mission
MTF	maintenance test flight
N	night
N1	gas producer (speed)
NA	not applicable
NAS	National Airspace System
NATO	North Atlantic Treaty Organization
nav	navigation
NAVAID	navigational aid
NBC	nuclear, biological, chemical
NCM	nonrated crew member
NDB	nondirectional radio beacon
NGR	National Guard regulation
no	number
NOE	nap-of-the-earth
NOTAM	notice to airmen

NSN	national stock number
NVD	night vision device
NVG	night vision goggles
NVS	night vision system
OGE	out-of-ground effect
P	pilot not on the controls
P*	pilot on the controls
PA	pressure altitude
pam	pamphlet
PAR	precision approach radar
pax	passenger
PC	pilot in command
PI	pilot (for grade slip purposes)
POI	program(s) of instruction
PM	preventive maintenance
PMD	preventive maintenance daily
PNVS	pilot night vision system
PPC	performance planning card
prog	programmed
PTIT	power turbine inlet temperature
R	reproducible
R/C	rate of climb
RCM	rated crew member
rec	reconnaissance
RET	retract
RL	readiness level
RPM	revolutions per minute
RRPM	rotor revolutions per minute
RS	right seat
RW	rotary wing
S	satisfactory (for grade slip purposes)
SALUTE	size, activity, location, unit, time, equipment
SAM	send a message
SEL	select
SFTS	synthetic flight training systems
S1	standardization flight engineer instructor
SM	statute mile
SOI	signal operation instructions
SOP	standing operating procedure
SP	standardization instructor pilot
SSN	social security number
STANAG	standardization agreement
Std	standard
STVA	self-tuning vibration absorber

TAMMS-A	The Army Maintenance Management System-Aviation
TAS	true airspeed
TC	training circular
TEAC	turbine engine analysis check
TM	technical manual
TRADOC	United States Army Training and Doctrine Command
U	unsatisfactory (for grade slip purposes)
US	United States (of America)
USA	United States Army
USAAVNC	United States Army Aviation Center
USAF	United States Air Force
UT	unit trainer
VA	Virginia
VFR	visual flight rules
VHF	very high frequency
VNIRP	vertical helicopter instrument recovery procedures
VMC	visual meteorological conditions
Vne	velocity, not to exceed (airspeed)
VOR	VHF omnidirectional range
VSI	vertical speed indicator
wt	weight
WX	weather
XMSN	transmission
Z	Zulu (Greenwich mean time)

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INDEX

This index is organized alphabetically by topics and subtopics. Topics and subtopics are identified by page numbers.

STANDARD EVALUATION/TRAINING GRADE SLIP

For use of this form, see TCs 1-209, 1-211, 1-212, 1-213, 1-214, 1-215, and 1-216; the proponent agency is TRADOC.

EXAMINEE/ TRAINEE	NAME	RANK	SSN
	UNIT		BIRTH MONTH
EVALUATOR/ INSTRUCTOR	NAME	RANK	SSN
	UNIT		

FLIGHT TIME DATA

TOTAL HOURS (FW):	TOTAL HOURS (RW):	
PURPOSE: EVALUATION/TRAINING (SPECIFY)		
TIME TODAY:	CUMULATIVE TIME:	SEAT:

TYPE AIRCRAFT: _____

	PI	PC	UT	IP	SP	IE	MP	ME	CE	
☐ CONTACT										
☐ INSTRUMENT										
☐ NVG/NVS										
☐ TACTICS										
☐ GUNNERY										
☐ OTHER _____										

DAY	NIGHT	HOOD	WX	SIMULATOR	NVG	NVS	

EVALUATOR/INSTRUCTOR RECOMMENDATIONS

	PI	PC	UT	IP	SP	IE	MP	ME	CE	
☐ (ISSUE) (VALIDATE) ORDERS/STATUS AS.										
☐ (SUSPEND) (REVOKE) DUTIES AS										

☐ REQUIRES ADDITIONAL (FLIGHT) (ACADEMIC) (SIMULATION DEVICE) TRAINING

☐ SEE BACK FOR COMMENTS

I HAVE DEBRIEFED THE EXAMINEE OR TRAINEE AND INFORMED HIM OF HIS STATUS.

EVALUATOR'S OR INSTRUCTOR'S SIGNATURE: _____

I HAVE BEEN DEBRIEFED BY THE EVALUATOR OR INSTRUCTOR AND UNDERSTAND MY CURRENT STATUS.

EXAMINEE'S OR TRAINEE'S SIGNATURE: _____

OVERALL GRADE FOR THIS FLIGHT IS: ☐ S ☐ U ☐ NA DATE: _____

DA FORM 4507-R, MAR 92 **EDITION OF SEP 88 IS OBSOLETE**

COMMENT SLIP

PAGE 2, DA FORM 4507-R, MAR 92

CONTINUATION COMMENT SLIP

For use of this form, see TCs 1-209, 1-211, 1-212, 1-213, 1-214, 1-215, and 1-216; the proponent agency is TRADOC

Examinee's/Trainee's Name: _____ Date: _____

DA FORM 4507-2-R, MAY 87

CONTINUATION COMMENT SLIP

RW PERFORMANCE PLANNING CARD

For use of this form, see TCs 1-209,1-211, 1-213, 1-215, and 1-216; the proponent agency is TRADOC.

DEPARTURE

PA	FAT		
TAKEOFF GWT	LOAD		
CALIBRATION FACTOR	FUEL		
	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX TORQUE AVAIL			
CONT TORQUE AVAIL			
GO/NO-GO TORQUE (OGE/IGE)			
PREDICTED HOVER TORQUE			
HOVER OGE TORQUE			
MAX ALLOWABLE GWT (OGE/IGE)			
MAX R/C OR ENDURANCE IAS			
MAX RANGE IAS			
SINGLE-ENG CAPABILITY IAS (MIN/MAX)			

VALIDATION FACTOR _____

SAFE PEDAL MARGIN YES_____ NO_____

ARRIVAL

PA	FAT		
LANDING GWT			
	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX ALLOWABLE GWT (OGE/IGE)			
MAX TORQUE AVAIL			
HOVER IGE TORQUE			
HOVER OGE TORQUE			

SAFE PEDAL MARGIN YES_____ NO_____

DA FORM 4887-R, MAY 87

FUEL MANAGEMENT

FUEL/TIME	
START_____/_____	BURNOUT_____Z
STOP_____/_____	RESERVE_____Z
	CONSUMPTION RATE_____LB PER HR

LONGITUDINAL CYCLIC TRIM

RET VNE KIAS	PROG VNE KIAS

CRUISE DATA

PA	FAT	VNE KIAS

	DUAL ENG	SINGLE ENG
CRUISE SPEED	_____IAS _____TAS	_____IAS_____TAS
CRUISE TORQUE		
CRUISE FUEL FLOW		

OPTIONAL DATA

WEIGHT COMPUTATION	
BASIC WT (OIL INCL)	
CREW AND FLT EQUIP	
EMERG OR OTHER EQUIP	
OPERATING WT	
FUEL WT	
PAX-BAGGAGE-CARGO-AMMO	
TAKEOFF WT (MINUS RUN-UP FUEL)	

REMARKS:

MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (CH-47)

For use of this form, see TC 1- 216; the proponent agency is TRADOC.

Examinee's / Trainee's Name_____ Date _____

Instructor or evaluator will sign in the first unused block

NO	MANEUVER/ PROCEDURE	GR
1	PRIOR-TO-MAINTENANCE-TEST-FLIGHT CHECKS	
2	BEFORE-STARTING-ENGINE CHECKS	
3	LCT MANUAL OPERATION CHECK	
4	STARTING ENGINE CHECKS	
5	AFCS EVALUATION	
6	ENGINE RUN-UP CHECKS	
7	AFCS FUNCTION CHECK	
8	DROOP ELIMINATOR CHECK	
9	TORQUE DIFFERENTIAL CHECK	
10	TAXI CHECKS	
11	MECHANICAL RIG CHECK	
12	BASELINE AND NORMAL ENGINE HEALTH INDICATOR TEST	
13	CONTROL POSITION CHECK	
14	BEFORE-HOVER CHECKS	
15	SPEED SWEEP CHECKS	
16	LCT LIFT-OFF/RETRACTION CHECK	
17	AUTOROTATION RPM CHECK	
18	SELF-TUNING VIBRATION ABSORBER CHECK	
19	RRPM DROOP CHECK AND THRUST ROD SLIPPAGE CHECK	
20	TURBINE ENGINE ANALYSIS CHECK	
21	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	
22	AFTER-LANDING CHECKS	
23	ENGINE SHUTDOWN CHECK	
24	ORAL EVALUATION	
25		
26		
27		
28		
29		
30		
31		
32		
33		

NOTE: ITEMS 25 THROUGH 33 INTENTIONALLY LEFT BLANK FOR LATER USE.

MANEUVER/PROCEDURE GRADE SLIP FOR CH-47 CREW MEMBERS

For use of this form,see TC 1-216; the proponent agency is TRADOC.

Examinee's/Trainee's Name_____Date_____

Instructor or evaluator will sign in the first unused block.

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
1	CREW MISSION BRIEFING		24	FLIGHT WITH AFCS OFF (RCM)	
2	VFR FLIGHT PLANNING (RCM)		25	CRUISE CHECK PROCEDURES	
3	IFR FLIGHT PLANNING (RCM)		26	EMERGENCY PROCEDURES	
4	DD FORM 365-4		27	PASSENGER BRIEFING	
5	DA FORM 4887-R (RCM)		28	INSTRUMENT TAKEOFF (RCM)	
6	PREFLIGHT INSPECTION		29	RADIO NAVIGATION (RCM)	
7	MAINT INSPECTION (NCM)		30	HOLDING PROCEDURES (RCM)	
8	ENGINE-START THROUGH BEFORE-TAKEOFF CHECKS		31	UNUSUAL ATTD RECOVERY (RCM)	
9	ACFT SECURITY CHECK (NCM)		32	RADIO COMM/INTERCOM PROCEDURES	
10	AIRCRAFT CLEARANCE AND AIRSPACE SURVEILLANCE		33	TWO-WAY RADIO FAILURE (RCM)	
11	GROUND TAXI		34	NONPRECISION APPROACH	
12	HOVER POWER CHECK		35	PRECISION APPROACH	
13	HOVERING FLIGHT		36	INADVERTENT IMC PROCEDURES/VHIRP (RCM)	
14	VMC TAKEOFF		37	AFTER-LANDING TASKS	
15	TRAFFIC PATTERN FLIGHT		38	MARK XII IFF SYSTEM	
16	PILOTAGE AND DEAD RECKONING (RCM)		39	PINNACLE OR RIDGELINE OPERATION	
17	DOPPLER/OMEGA NAV (RCM)		40	FM RADIO HOMING	
18	BEFORE-LANDING CHECK		41	AERIAL OBSERVATION	
19	VMC APPROACH		42	EVASIVE MANEUVERS	
20	ROLL-ON LANDING		43	MULTIAIRCRAFT OPERATIONS	
21	SLOPE OPERATIONS		44	PARADROP OPERATIONS	
22	HOT/CLOSED CIRCUIT REFUELING (NCM)		45	EXTERNAL LOAD OPERATIONS	
			46	INTERNAL LOAD OPERATIONS	
23	SIMULATED ENG FAILURE AT ALTITUDE		47	AIRCRAFT SURVIVABILITY EQUIPMENT	

MANEUVER/PROCEDURE GRADE SLIP FOR CH-47 CREW MEMBERS

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
48	EMERGENCY PROCEDURES FOR NVG FAILURE				
49	ARMAMENT SUBSYSTEM (NCM)				
50	LANDING AREA RECON				
51	TERRAIN FLT MSN PLANNING				
52	TERRAIN FLIGHT NAVIGATION				
53	TERRAIN FLIGHT TAKEOFF				
54	TERRAIN FLIGHT				
55	TERRAIN FLIGHT APPROACH				
56	MASKING AND UNMASKING				
57	TERRAIN FLIGHT DECEL				
58	MAINT TEST FLIGHT (NCM)				
59	TACTICAL COMM/ECCM (RCM)				
60	TACTICAL REPORT				
61	ORAL EVALUATION				

BATTLE-ROSTERED CREW EVALUATION/TRAINING GRADE SLIP

For use of this form, see TC 1-209 and TCs 1-211 through 1-219; the proponent agency is TRADOC.

BATTLE-ROSTERED CREW EXAMINEES/ TRAINEES	NAME	RANK
	PC:	
	PI:	
	NONRATED CREW MEMBERS	
	DUTY SYMBOL NAME	RANK
	UNIT:	
EVALUATOR/ INSTRUCTOR	NAME	RANK
	UNIT:	

CREW DATA

TOTAL BATTLE-ROSTERED CREW HOURS:	DATE DESIGNATED A BATTLE-ROSTERED CREW:
PURPOSE: EVALUATION/TRAINING	
TIME TODAY:	CUMULATIVE TIME:

TYPE AIRCRAFT:_____

CREW TASK 1 _____ D/N/NVD		CREW TASK 6 _____ D/N/NVD	
CREW TASK 2 _____ D/N/NVD		CREW TASK 7 _____ D/N/NVD	
CREW TASK 3 _____ D/N/NVD		CREW TASK 8 _____ D/N/NVD	
CREW TASK 4 _____ D/N/NVD		CREW TASK 9 _____ D/N/NVD	
CREW TASK 5 _____ D/N/NVD		CREW TASK 10 _____ D/N/NVD	

DAY	NIGHT	WX	SIMULATOR	NVG	NVS	

EVALUATOR/INSTRUCTOR RECOMMENDATIONS

- ☐ (ISSUE) (VALIDATE) CREW QUALIFICATIONS
- ☐ (SUSPEND) (REVOKE) CREW QUALIFICATIONS
- ☐ REQUIRES ADDITIONAL (FLIGHT) (ACADEMIC) (SIMULATION DEVICE) TRAINING
- ☐ SEE BACK FOR COMMENTS

I HAVE DEBRIEFED THE EXAMINEES/TRAINEES AND INFORMED THEM OF THEIR STATUS.

EVALUATOR'S/INSTRUCTOR'S SIGNATURE:_____

WE HAVE BEEN DEBRIEFED BY THE EVALUATOR/INSTRUCTOR AND UNDERSTAND OUR CURRENT STATUS.

PC'S SIGNATURE:_____

PI'S SIGNATURE:_____

NONRATED CREW MEMBERS' SIGNATURES: _____

_____

OVERALL GRADE FOR THIS FLIGHT IS: | S | U | NA | DATE: _____

DA FORM 7121-R, MAR 92

COMMENTS

* U.S. G.P.O.:1992-627-027:60033

TC 1-216
8 October 1992

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
02471

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