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AIRCREW TRAINING MANUAL

UTILITY HELICOPTER, UH-1

CONTENTS

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*This publication supersedes TC 1-211, 30 September 1988, and pages 5-1 through 5-33 of FM 1-544, 4 September 1990.

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BLANK FORMS

DA Form 4507-R (Standard Evaluation/Training Grade Slip)
DA Form 4507-2-R (Continuation Comment Slip)
DA Form 5051-2-R (Maintenance Test Flight Maneuvers Grade Slip (UH-1))
DA Form 5702-R (Maneuver/Procedure Grade Slip for UH-1 RCM)
DA Form 5702-1-R (Maneuver/Procedure Grade Slip for UH-1 NCM)
DA Form 7121-R (Battle-Rostered Crew Evaluation/Training Grade Slip)
DA Form 7243-R (UH-1 Performance Planning Card)

PREFACE

This manual provides specific guidelines for executing UH-1 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 UH-l crew members.

This manual applies to unit commanders, evaluators, trainers, maintenance test pilots, and crew members who operate UH-1 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 55-1520-210-10 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-L, 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 training requirements for UH-1 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 individual 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. CREW STATION DESIGNATION

The commander will designate one or both (right and left) crew stations for each aviator. The aviator will perform all in-flight duties and be evaluated during all hands-on performance tests in the assigned station(s). If an aviator is designated to fly in the right and left seats, he is required to be evaluated in both during hands-on performance tests. This is not to say that he is required to perform all maneuvers in both seats. The IPs, SPs, IEs, and MEs must maintain proficiency in both crew stations.

1-2. BATTLE ROSTERING

Battle rostering is the designation of two or more individuals to perform as a crew. Consistently assigning the same crews together (battle rostering) improves crew coordination. Commanders make battle-rostered assignments and should enforce their practice, when possible, consistent with crew resources available in 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. Upon the recommendation of an evaluator and the approval of the commander the individual may begin flying as a member of that crew while in mission training except for NVG mission training. TC 1-210 further defines battle rostering.

1-3. SYMBOL USAGE AND WORD DISTINCTIONS

a. Symbol Usage. The diagonal (/) indicates or or and. For example, IP/SP may mean IP or SP or may mean IP and SP.

b. Word Distinctions.

(1) Warning, caution, and note. 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 and NVD.

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

(b) NVD refers to NVS and NVG.

(4) Nonrated crew member. The NCMs who perform UH-1 crew duties are divided into three categories: crew chief, flight medic, and door gunner. An NCM is qualified when he completes all phases of training, the appropriate qualification course, and the evaluation outlined in Chapter 8 of this manual. Door gunners will be trained and evaluated per TC 1-140.

(a) Crew chief. The CE helps maintain the assigned aircraft and performs NCM duties.

(b) Flight medic. The MO is responsible for in-flight medical assistance to patients. He performs patient care and other duties assigned by the PC.

(c) Donner. The OR is responsible for operating the armament subsystem.

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

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

(7) Patient. When referenced in the flight medic tasks, a patient may be an actual one or be simulated as directed by the unit commander.

CHAPTER 2

QUALIFICATION TRAINING

Rated and nonrated crew member qualification requirements are stated in AR 95-1 and TC 1-210.

2-1. INITIAL QUALIFICATION

a. Rated Crew Member. Initial qualification training in the UH-1 is conducted at the US Army Aviation Center, or at DA-approved training sites, according to an established program of instruction. Aircraft series qualification is conducted per AR 95-1 and this ATM.

b. Nonrated Crew Member. MOS qualification is conducted at DA-approved training sites.Qualification training for CEs, MOs, FIs, and SIs is conducted at the unit per this chapter, applicable regulations, and the commander's ATP. These NCMs must complete academic and flight training and pass the required written examination within 90 consecutive days (reserve components, 1 year).

(1) Academic training. The CE must receive sufficient instruction to be knowledgeable in the subjects listed in Figure 2-1 (page 2-2). The commander will specify the academic subjects required for other NCMs. When possible, the 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 examination last. The NCM must pass the 50-question written examination with a grade of at least 70 percent.

(2) Flight training. The CE, FI, and SI must be trained to the standards given in Chapter 6 for all tasks listed in Figure 5-2 (page 5-5); the flight medic, for all tasks listed in Figure 5-3 (page 5-7). Night tasks required for qualification training are identified by an X in the night column of the same figures. Figure 2-2 (page 2-2) shows the flight tasks and hours required for qualification. The commander will select the base tasks required for qualification of other nonrated crew members. The commander may reduce the total flight time shown based on a recommendation from the SP, IP, SI, or FI.

Introduction	Emergency procedures
Maintenance forms and records	Hydraulic systems
Structure	Weight and balance
Fuel and oil systems	Avionics and mission equipment
Power plant and related systems	Crew coordination
Transmission and drive systems	Maintenance and aircraft operator's manual written examination
Rotor systems	
Electrical systems	
Flight controls	

Figure 2-1. Academic subjects for nonrated crew members

Flight Instruction	Hours
Run-up tasks[1]	-
Before-flight tasks[1]	-
Base tasks[2]	6.0
Emergency procedures	1.0
Mission tasks[2]	4.0
After-landing tasks[1]	-
Evaluation[3]	3.0
Total hours	14.0

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

Figure 2-2. Flight training for nonrated crew members

2-2. NVG QUALIFICATION

NVG training for all UH-1 crew members will comply with TC 1-210, Chapter 4.

2-3. INITIAL NVG QUALIFICATION

Initial NVG qualification training will be conducted according to TC 1-210, Chapter 4, and this ATM. Figure 2-3 shows the flight training tasks.

2-4. UH-1 INITIAL, ADDITIONAL AIRCRAFT, OR REFRESHER NVG QUALIFICATION

Each crew member must complete the requirements in TC 1-210 and the tasks shown in Figure 2-3.

Task	Title
1000*	Conduct crew mission briefing
1007	Perform before-starting engine through engine shutdown checks
1016	Perform hover power check
1017	Perform hovering flight
1018	Perform VMC takeoff
1022	Perform traffic pattern flight
1023*	Perform fuel management procedures
1028	Perform VMC approach
1032	Perform slope operations
1036	Perform hover OGE check
1068	Perform or describe emergency procedures
1083	Perform or describe inadvertent IMC procedures/VHIRP
2078	Perform terrain flight mission planning
2079	Perform terrain flight navigation
2081	Perform terrain flight
2086	Perform masking and unmasking
2087	Perform terrain flight deceleration

*These tasks apply to RCMs only.

Figure 2-3. Flight tasks for initial NVG qualification

2-5. DOOR GUNNER TRAINING

Door gunners will receive academic and hands-on instruction per TC 1-140 prior to performing their duties.

2-6. INITIAL AND SUBSEQUENT AIRCRAFT MAINTENANCE TEST PILOT QUALIFICATION

a. Initial MP Qualification. Initial MP qualification will be per AR 95-1 and TC 1-210.

b. Subsequent MP Qualification. If an aviator needs to perform maintenance test flights on the UH-l aircraft in which he has not received formal resident training, he may be trained in the field by a UH-1 ME. Field training procedures that apply to MP qualifications are given below.

(1) Prerequisites.

(a) The aviator must be qualified and current in the aircraft for which training is sought.

(b) The aviator seeking this training must be qualified as an MP through initial qualification or the challenge program in the AH-1 or OH-58A/C.

(2) Qualification requirements. The aviator must receive MTF training from an ME in the appropriate aircraft. Figure 2-4 contains the recommended MTF training. Academic training will be conducted and documented showing that the prospective MP has sufficient knowledge in all aircraft systems, including the components and their control movements. Prior to conducting the final evaluation, the unit will coordinate with the Directorate of Evaluation and Standardization, Fort Eustis, Virginia, for approval. Only a DOES or DOES-designated ME will administer the final evaluation. Once the final evaluation is completed, the aviator will receive an initial MP qualification memorandum from DOES. The final evaluation grade slip recommendation for MP status may be used by the unit as authorization for orders until the memorandum is received from DOES.

(3) Grade slips. A copy of the evaluation grade slip for the final evaluation/initial designation of a field-trained MP in a subsequent aircraft will be sent to Assistant Commandant, USAALS, ATTN: ATZG-LES-M, Fort Eustis, VA 23604-5431.

Flight Instruction	Hours
Flight planning[1]	-
Flight readiness inspection[1]	-
Before-starting engine checks[1]	-
Systems and engine run-up checks[1]	-
Baseline and normal HIT checks[1]	-
Test flight hover maneuvers[2]	2.0
In-flight test flight maneuvers[2]	3.0
After-landing and engine shutdown checks[1]	-
Postflight checks[1]	-
Forms and records completion[1]	-
Total hours	5.0

[1]These tasks are considered flight instruction, even though flight time is not logged.

[2]Hours may be adjusted based on proficiency demonstrated to an ME.

Figure 2-4. Flight training guide for subsequent MP qualification

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 lists refresher training requirements and provides guidelines for developing refresher training programs.

3-1. TRAINING REQUIREMENTS

a. Rated Crew Member. The RCM completes RL 3 requirements when the criteria in TC 1-210, Chapter 2, is met. Figure 3-1 is a guide for developing a refresher academic training program for RCMs. Figure 3-2 (page 3-2) is a guide for developing a refresher flight training program for RCMs.

Emergency procedures
Aircraft systems, structure, and airframe
Avionics
Weight and balance
Operational limitations and performance planning charts
Flight planning, to include DOD flight information publications
Instrument procedures
Local SOPs and regulations
Airspace regulations
Ground and air safety
Crew coordination
Aircraft operator's manual written examination

Figure 3-1. Refresher academic training guide for rated crew members

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	8.0
Instrument evaluation	2.0
Total hours	10.0

Figure 3-2. Refresher flight training guide for rated crew members

b. Nonrated Crew Member. The NCM completes RL 3 requirements when the criteria in TC 1-210, Chapter 2, is met. Nonrated crew members have minimum flying-hour requirements as specified in AR 600-106. Figure 3-3 is a guide for developing a refresher academic training program for NCMs. Figure 3-4 is a guide for developing a refresher flight training program for NCMs. The commander should tailor refresher academic training to fit the specific needs of each NCM.

MOS-related subjects
Maintenance forms and records
Aircraft systems, structure, and airframe
Weight and balance
Avionics and mission equipment
Emergency procedures
Crew coordination
Local SOPs and regulations
Ground and air safety
Maintenance and aircraft operator's manual written examination

Figure 3-3. Refresher academic training guide for nonrated crew members

Flight Instruction	Hours
Local area orientation	1.0
Demonstration and practice of base tasks	2.0
Flight evaluation	1.0
Total hours	4.0

Figure 3-4. Refresher flight training guide for nonrated crew members

NOTE: Units may use applicable USAAVNC lesson plans, ETPs, and POIs to conduct academic training for rated and nonrated crew members. These materials may be obtained by writing to Commander, US Army Aviation Center, ATTN: ATZQ-TDI-D, Fort Rucker, AL 36362-5035.

3-2. NIGHT TRAINING

a. Unaided Night Flight. Task requirements are listed in Chapter 5 (Figures 5-1 through 5-3) 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 RCM and NCM must complete the requirements in Chapter 4 of TC 1-210 and the flight tasks in Figure 2-3 (page 2-3). NVG considerations for tasks (when applicable) are in Chapter 6.

CHAPTER 4

MISSION TRAINING

This chapter and TC 1-210 prescribe mission training requirements and guidelines for developing a mission training program. Mission training develops the crew member's and aircrew's ability to perform specific mission/additional tasks selected by the commander to support the Unit's METL. Mission training should be done during mission support or collective training.

4-1. TRAINING REQUIREMENTS

a. Rated Crew Member. The mission training requirements for the RCM are outlined in TC 1-210. The guidelines in Figure 4-1 are based on FAC 1 requirements for mission tasks.

b. Nonrated Crew Member. The mission training requirements for the NCM are outlined in TC 1-210. NCMs have minimum flying-hour requirements as specified in AR 600-106. During mission training, the NCM does not have minimum task, iteration, or APART requirements. The mission training guidelines in Figure 4-1 are based on mission task requirements for NCMs.

Flight Instruction	Hours	
	Rated	Nonrated
Local area orientation*	2.0	1.0
Mission/additional tasks	20.0	6.0
Total hours	22.0	7.0

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

Figure 4-1. Mission flight training guide for rated and nonrated crew members

4-2. NIGHT TRAINING

a. Unaided Night Flight. Mission tasks which the commander may select are listed in Chapter 5 (Figure 5-4). Additional tasks may be developed by the commander. Night considerations for tasks are in Chapter 6.

b. NVG Flight. NVG mission training requirements are outlined in TC 1-210. Commanders determining a requirement for using NVG in mission profiles must develop a mission training program and specify mission/additional tasks. Mission tasks which the commander may select are listed in Chapter 5 (Figure 5-4). NVG flight considerations for tasks are in Chapter 6.

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 Individual Aviation Training Folder. Commanders are not authorized to delete any MTF tasks. The RCMs performing as MPs should be limited to duties in one primary and one alternate/ additional aircraft and be classified FAC 2. The MPs should be required to complete only those additional mission tasks that the commander considers complementary to the MTF mission.

CHAPTER 5

CONTINUATION TRAINING

This chapter outlines the tasks and aircraft hours that all crew members must complete to support the Unit's mission. All rated crew members also must complete the simulation device hours specified. TC 1-210 lists the requirements for maintaining RL 1. The required performance standards are in Chapters 6 and 7 of this manual.

5-1. TRAINING REQUIREMENTS

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

(1) Rated crew member.

(a) FAC l-- 48 hours, from a crew station with access to the flight controls.

(b) FAC 2-- 30 hours, from a crew station with access to the flight controls.

NOTE: FAC 1 and FAC 2 evaluators and unit trainers may credit those hours they fly while performing assigned duties at any crew station, during the day and at night unaided, toward their semiannual flying-hour requirement.

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

(d) RL 1 RCMs in NVG-designated positions and NVG PCs-- 9 hours of NVG flight, flown at night in the aircraft from a crew station with access to the flight controls.

(2) Nonrated crew member.

(a) FAC 1 and FAC 2 -- 24 hours (12 hours, USAR and ARNG) in the aircraft while performing crew duties and complying with AR 600-106.

(b) NCMs in NVG-designated Positions-- 5 hours at night while performing crew duties and wearing NVG. (This requirement applies only to NCMs who are designated RL 1 for NVG purposes.)

NOTE: FIs and SIs may credit those hours they fly while performing assigned duties toward their semiannual flying-hour requirement.

b. Annual Flying-Hour Requirements--Simulation Device. RCMs may apply 12 hours of UH1FS time toward the semiannual flying-hour requirements specified in a(l) (a) and (b) above. Annual UH1FS requirements for FAC 1 and FAC 2 active duty RCMs who are within 25 SM of a UH1FS are 20 hours and 12 hours, respectively. FAC 1 and FAC 2 active duty RCMs who are not within 25 SM of a UH1FS 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 UH1FS, 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 listed in Figures 5-1 through 5-3.

(a) Tasks with an X in the I column of Figure 5-1 will be performed at least once in the instrument mode of flight.

(b) Tasks with an X in the N column of Figures 5-1 through 5-3 will be performed at least once in the unaided night mode of flight.

(c) Tasks with an X in the NVG column of Figures 5-1 through 5-3 will be performed at least once in the NVG mode of flight (if the crew member is RL 1 for NVG).

NOTE: 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.

(2) One iteration of those tasks which are mandatory during NBC training as listed in paragraph 5-3.

(3) Any iterations of mission tasks listed in Figure 5-4 (page 5-9) as determined by the commander.

NOTE 1: In addition to the required minimum annual tasks and iterations, RCMs designated as MPs will perform annually a minimum of four iterations of the MTF tasks listed in Figure 5-5 (page 5-11). The MEs will perform two iterations from each flight crew station annually. Each MTF mission task listed is mandatory for an MP or ME standardization evaluation.

NOTE 2: RCMs who are required to perform MP or ME duties in 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.

(5) Any iterations of instrument tasks in an additional aircraft, in caiegory, at the discretion of the commander.

Task	Title	S	I	N	NVG
1000	Conduct crew mission briefing	X	X	X	X
1001	Plan a VFR flight	X			
1002	Plan an IFR flight		X		
1003	Confirm or prepare DD Form 365-4 (Weight and Balance Clearance Form - Tactical/Transport)	X			
1004	Prepare DA Form 7243-R (UH-1 Performance Planning Card)	X	X		
1005	Perform preflight inspection	X		X	
1007	Perform before-starting engine through engine shutdown checks	X		X	
1010	Operate aviation life support equipment	X			
1016	Perform hover power check	X		X	X
1017	Perform hovering flight	X		X	X
1018	Perform VMC takeoff	X		X	X
1020	Perform simulated maximum performance takeoff	X			

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 at the flight controls while the crew member is wearing NVG. (Figure 5-4 on page 5-9 lists additional mandatory NVG evaluation tasks.)

Figure 5-1. Rated crew member base task list

Task	Title	S	I	N	NVG
1022	Perform traffic pattern flight	X			X
1023	Perform fuel management procedures	X	X	X	X
1025	Navigate by pilotage and dead reckoning			X	
1028	Perform VMC approach	X		X	X
1030	Perform shallow approach to a running landing	X			
1031	Perform confined area operations	X			X
1032	Perform slope operations	X		X	X
1036	Perform hover OGE check	X			X
1049	Perform postflight inspection	X		X	
1050	Perform hovering autorotation	X			
1052	Perform simulated engine failure at a hover	X			
1053	Perform simulated engine failure at altitude	X or	X		
1056	Perform manual throttle operation, emergency governor mode	X			
1068	Perform or describe emergency procedures	X	X		X
1069	Identify or perform hand and arm signals				
1075	Perform instrument takeoff		X		
1076	Perform radio navigation		X		
1077	Perform holding procedures		X		
1078	Perform unusual attitude recovery	X or	X		
1079	Perform radio communication procedures	X	X		
1080	Perform or describe procedures for two-way radio failure		X		
1081	Perform nonprecision approach		X		
1082	Perform precision approach		X		
1083	Perform or describe inadvertent IMC procedures/VHIRP	X or	X		X
1095	Operate aircraft survivability equipment	X			
1099	Operate Mark XII IFF System	X or	X		

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

Task	Title	S	N	NVG
1005	Perform preflight inspection	X	X	
1006	Perform a preventive maintenance service	X	X	
1007	Perform before-starting engine through engine shutdown checks	X	X	
1010	Operate aviation life support equipment	X		
1014	Maintain airspace surveillance	X	X	X
1016	Perform hover power check	X	X	X
1017	Perform hovering flight	X	X	X
1018	Perform VMC takeoff	X	X	X
1020	Perform simulated maximum performance takeoff			
1022	Perform traffic pattern flight	X		X
1025	Navigate by pilotage and dead reckoning		X	
1028	Perform VMC approach	X	X	X
1030	Perform a shallow approach to a running landing	X		
1031	Perform confined area operations	X		X
1032	Perform slope operations	X	X	X
1036	Perform hover OGE check	X		X
1042	Perform aircraft refueling	X		
1049	Perform postflight inspection	X	X	
1050	Perform hovering autorotation			
1052	Perform simulated engine failure at a hover			

Legend:

S--tasks that are mandatory for standardization 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 crew member is wearing NVG. (Figure 5-4 on page 5-9 lists additional mandatory NVG evaluation tasks.)

Figure 5-2. CE, FI, and SI base task list

Task	Title	S	N	NVG
1053	Perform simulated engine failure at altitude			
1056	Perform manual throttle operation, emergency governor mode			
1065	Perform emergency egress	X		
1068	Perform or describe emergency procedures	X		X
1069	Identify or perform hand and arm signals	X	X	
1070	Obtain fuel sample	X		
1071	Conduct passenger briefing	X		
1083	Perform or describe inadvertent IMC procedures/VHIRP	X		X
1095	Operate aircraft survivability equipment	X		
1099	Operate Mark XII IFF System	X		

Figure 5-2. CE, FI, and SI base task list (continued)

Task	Title	S	N	NVG
1007	Perform before-starting engine through engine shutdown checks	X	X	
1010	Operate aviation life support equipment	X		
1014	Maintain airspace surveillance	X	X	X
1016	Perform hover power check	X	X	X
1017	Perform hovering flight	X	X	X
1018	Perform VMC takeoff	X	X	X
1020	Perform simulated maximum performance takeoff			
1022	Perform traffic pattern flight	X		X
1025	Navigate by pilotage and dead reckoning		X	
1028	Perform VMC approach	X	X	X
1030	Perform a shallow approach to a running landing	X		
1031	Perform confined area operations	X		X
1032	Perform slope operations	X	X	X
1036	Perform hover OGE check	X		X
1042	Perform aircraft refueling	X		
1050	Perform hovering autorotation			
1052	Perform simulated engine failure at a hover			

Legend:

S--tasks that are mandatory for standardization 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 crew member is wearing NVG. (Figure 5-4 on page 5-9 lists additional mandatory NVG evaluation tasks.)

Figure 5-3. Flight medic base task list

Task	Title	S	N	NVG
1053	Perform simulated engine failure at altitude			
1056	Perform manual throttle operation, emergency governor mode			
1065	Perform emergency egress	X		
1068	Perform or describe emergency procedures	X		X
1069	Identify or perform hand and arm signals	X	X	
1070	Obtain fuel sample	X		
1071	Conduct passenger briefing	X		
1083	Perform or describe inadvertent IMC procedures/VHIRP	X		X
1095	Operate aircraft survivability equipment	X		
1099	Operate Mark XII IFF System	X		
1120	Load, secure, and unload litter and ambulatory patients	X		
1121	Perform cardiopulmonary resuscitation	X		
1122	Monitor vital signs in flight	X		
1123	Perform medical sorting (triage)	X		
1124	Identify and treat adverse effects of altitude on a patient with chest and head injuries	X		
1125	Administer oxygen therapy by nasal catheter	X		
1126	Administer oxygen by mask	X		
1127	Initiate an intravenous infusion	X		
1128	Administer manual ventilation by bag-mask	X		
1129	Perform a preflight inspection of medical equipment	X		

Figure 5-3. Flight medic 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
2010	Perform rappelling procedures
2011	Perform internal rescue-hoist operations
2012	Perform aerial mine delivery
2013	Perform paradrop operations
2015	Perform stability operations
2016	Perform external load operations
2017	Perform internal load operations
2018	Reconnoiter and recommend an LZ or a PZ
2019	Perform a route reconnaissance
2020	Call for and adjust indirect fire
2022	Perform aerial radio relay
2044	Perform actions on contact
2046[1]	Prepare aircraft for mission
2066	Perform a zone reconnaissance
2067	Perform an area reconnaissance
2073[2]	Perform standard autorotation
2074[2]	Perform low-level autorotation
2077[2]	Perform simulated antitorque malfunction (fixed pedal setting)
2078*	Perform terrain flight mission planning
2079*	Perform terrain flight navigation
2081*	Perform terrain flight
2082	Perform techniques of movement

*These are mandatory NVG evaluation tasks.

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[1]This task applies to NCMs only.
[2]Emergency procedures training criteria outlined in AR 95-1 must be met before these maneuvers are performed.

Figure 5-4. Crew member mission task list

Task	Title
2083	Negotiate wire obstacles
2086	Perform masking and unmasking
2087	Perform terrain flight deceleration
2088	Identify major US or allied equipment and major threat equipment
2090	Perform tactical communication procedures and electronic counter-countermeasures
2091[3]	Transmit a tactical report
2092[2]	Perform standard autorotation with turn
2093[2]	Perform simulated hydraulic system malfunction
2120[4]	Prepare a patient for hoist operations
2121[4]	Apply medical antishock trousers
2122[4]	Operate the portable suction apparatus
2123[4]	Restrain a patient
2124[4]	Assist with an emergency delivery
2125[4]	Operate the portable heart rate monitor
2126[4]	Relay patient information to medical control
2127[4]	Complete an emergency medical report

[3]This task applies to RCMs only.
[4]These tasks apply to MOs only.

Figure 5-4. Crew member mission task list (continued)

Task	Title
2300	Perform prior-to-maintenance-test-flight checks
2302	Perform before-starting engine checks
2305	Perform starting engine checks
2322	Perform engine run-up checks
2334	Perform baseline or normal engine health indicator test
2336	Perform before-takeoff checks
2338	Perform takeoff-to-hover check
2340	Perform torquemeter/power check
2342	Perform hovering turns check
2344	Perform sideward hovering flight check
2345	Perform forward hovering flight check
2346	Perform pylon mount check
2347	Perform engine response check
2348	Perform power cylinder check
2349	Perform low RPM hover check
2350	Perform manual throttle operations, emergency governor mode check
2351	Perform takeoff and climb checks
2352	Perform level-off checks
2353	Perform control rigging check
2354	Perform autorotation RPM check
2355	Perform hydraulics-off check
2357	Perform engine topping check
2359	Perform stabilizer bar check
2361	Perform vibration analysis check
2363	Perform cyclic rigging check
2365	Perform flight instrument checks
2366	Perform communication and navigation equipment checks
2369	Perform special/detailed procedures checks
2370	Perform after-landing and engine shutdown checks

Figure 5-5. Maintenance test pilot task list

5-2. NVG CURRENCY REQUIREMENTS

a. Rated Crew Member. To be considered NVG current, an RCM (from a crew station with access to the flight controls) must participate every 45 consecutive days in a one-hour flight at night in the aircraft while wearing NVG.

b. Nonrated Crew Member. To remain NVG current, the NCM (wearing NVG) must participate every 60 consecutive days in a one-hour flight in the aircraft.

c. Rated and Nonrated Crew Members. Those RCMs and NCMs 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, SP, SI, FI, or (if applicable) NCT. The minimum tasks to be evaluated are listed in Figures 5-1 through 5-3 (pages 5-3 through 5-8). During proficiency flight evduations, crew members are not required to perform those tasks identified for NVG evaluations in Figure 5-4.

5-3. ANNUAL NBC TRAINING REQUIREMENTS

Annual NBC training is mandatory for all rated FAC 1 positions and those rated FAC 2 positions selected by the commander. The commander also will select those nonrated FAC 1 positions requiring annual NBC training. Crew members must wear full MOPP gear (MOPP level 4) during NBC training. NBC training is not required for FAC 3 positions.

a. Crew members will receive NBC training in the tasks listed below and will perform at least one iteration annually. The commander also may-select other tasks based on the Unit's mission.

(1) Task 1005, Perform preflight inspection.

(2) Task 1007, Perform before-starting engine through engine shutdown checks.

(3) Task 1016, Perform hover power check.

(4) Task 1017, Perform hovering flight.

(5) Task 1018, Perform VMC takeoff.

(6) Task 1028, Perform VMc approach.

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

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

(2) A qualified and current aviator not wearing a protective mask is at one set of the flight controls at all times.

(3) Aircrews do not receive emergency procedures training in flight while wearing MOPP gear. (They will complete this training in simulation devices or static aircraft).

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

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 or evaluation flights may not be mandatory for other flights.

6-1. TASK CONTENTS

a. Task Number and Title. Each task is identified by a number and a title which correspond to those for the tasks listed in Chapter 5 (Figures 5-1 through 5-4). 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, listed separately, and assigned 3000-series numbers. The commander will develop conditions, standards, and descriptions for these tasks. An information copy of each additional task should be forwarded to Director, Directorate of Evaluation and Stardardization, ATTN: ATZQ-ES, Fort Rucker, AL 36362-5208.

b. Conditions. The conditions specify the situation in which the task is to be performed. They describe the important aspects of the performance environment. References to the UH1FS in the conditions do not apply to nonrated crew members. 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), and PC (pilot in command). The description also includes those actions to be performed by the CE (crew chief) and MO (flight medic or other medical personnel). 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. During single-pilot operations or when crew members are not available, the PC will direct/ perform the duties specified in the task descriptions.

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

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

d. During NVG continuation training, both aviators must be qualified and current in the aircraft and NVG. In addition, they must wear the same type of NVG and occupy a crew station with access to the controls.

NOTE: An aviator 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.

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

f. Mandatory NVG evaluation tasks are listed in Figures 5-1 through 5-4. 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) When operating with the skids above the trees and vegetation in the flight path up to 25 feet AHO--40 KIAS (maximum).

(2) When operating with the skids between 25 and 80 feet AHO--7O KIAS (maximum).

(3) When operating with the skids above 80 feet AHO--whatever airspeed operational requirements dictate and aircraft limitations allow.

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

g. An infrared band-pass filter or a pink-light-modified searchlight or landing light must be operational before NVG operations are conducted.

h. 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 1020, Perform simulated maximum performance takeoff.

(2) Task 1031, Perform confined area operations.

(3) Task 1036, Perform hover OGE check.

(4) Task 1075, Perform instrument takeoff.

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

(6) Task 2008, Perform evasive maneuvers.

(7) Task 2010, Perform rappelling procedures.

(8) Task 2011, Perform internal rescue-hoist operations.

(9) Task 2015, Perform stability operations.

(10) Task 2016, Perform external load operations.

(11) Task 2081, Perform terrain flight.

(12) Task 2086, Perform masking and unmasking.

(13) Task 2087, Perform terrain flight deceleration.

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 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 the **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 (page 6-6) 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 the 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 seaquencing 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 effectively executing aircrew tasks. Research has shown that crew coordination directly affects mission performance. The specific aspects of crew coordination defined in that research 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 confirmation of those responsibilities during the preflight crew briefing.

(4) Involvement of each crew member in monitoring the need for assistance in coping with terrain, visual conditions, mission, and other stressors.

(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 the 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 lost.

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

f. Aviators 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 visually clear the immediate area in all directions during hover and taxi operations and left, right, and overhead before and during takeoff and before initiating climbs or descents.

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 (page 6-10) 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 tail rotor pedals.
Bogey--an unidentified aircraft assumed to be enemy.
Braking--announcement made by a 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.
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.

Figure 6-4. Examples of standard words and phrases

Hover--horizontal movement of aircraft perpendicular to its heading; will be followed by the word "left" or "right."
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 aircraft by using available terrain features and to position the aircraft above 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.
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.

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

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."
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: Conduct crew mission briefing.

CONDITIONS: Prior to flight in a UH-1 helicopter or a UH1FS, by the PC with all crew members present, and given DA Form 5484-R (Aircrew Mission Briefing) and a crew briefing checklist.

STANDARDS:

1. Without error, brief the mandatory and mission-related items detailed on DA Form 5484-R, the crew briefing checklist, or the unit SOP.

2. Assign crew member mission duties and responsibilities.

3. Assign crew member cockpit duties and responsibilities per the crew briefing checklist.

DESCRIPTION:

1. The PC must brief the crew on the mandatory items from DA Form 5484-R and the crew briefing checklist. He will use a checklist similar to the one shown in Figure 6-5 (page 6-14) to conduct the aircrew briefing. The checklist also will aid in assigning crew duties and responsibilities prior to and during the mission.

2. During the briefing, the PC must discuss the critical aspects of the mission from takeoff to tie-down. He should include all factors of the flight; these include the actions, duties, and responsibilities of each crew member.

3. In addition, the PC will identify mission and flight requirements that will demand effective communication and proper sequencing and timing of actions by the crew members. (The PC must realize that added caution may be necessary if the crew members have not flown together as a battle-rostered crew.) The crew members will acknowledge that they understand the assigned actions, duties, and responsibilities.

4. The overall goal is to reduce uncertainty by preplanning a margin of error to compensate for unexpected events.

5. Have the crew members acknowledge the PC'S assignment of duties and responsibilities.

REFERENCE:

AR 95-1

CREW BRIEFING CHECKLIST

1. Crew introduction.
   a. Personal and professional equipment.
   b. Crew endurance.
2. Mission.
3. Execution.
   a. Routes and altitudes.
   b. Estimated time en route.
   c. Fuel and refuel requirements.
4. Weather and NOTAMs.
5. Aircraft.
   a. Mission equipment.
   b. Service and inspection criteria.
   c. Performance data.
   d. Operating restrictions.
6. Emergency and egress procedures.
   a. Mission considerations.
   b. NCM and passenger actions and responsibilities.
   c. Rendezvous points.
   d. Removal of injured personnel.
   e. Inadvertent IMC procedures.
7. Flight control transfer and emergency procedure coordination.
   a. Aircraft control.
   b. Dynamic rollover.
   c. Cyclic hardover.
8. Crew duties.
   a. Nonrated crew members.
      (1) Secure passengers and cargo.
      (2) Announce traffic and obstacles.
   b. Pilot on the controls.
      (1) Fly the aircraft (focus primarily outside the aircraft).
      (2) Avoid traffic and obstacles.
      (3) Cross-check instruments and systems.
      (4) Monitor and transmit on assigned radios.
   c. Pilot not on the controls.
      (1) Announce traffic and obstacles.
      (2) Announce when focused inside the aircraft.
      (3) Adjust avionics, and monitor and transmit on assigned radios.
      (4) Navigate.
      (5) Cross-check instruments and systems.
      (6) Copy ATC clearances and mission data, and perform fuel consumption checks.
9. Questions concerning the PC's crew mission briefing.

TASK 1001

TASK: Plan a VFR flight.

CONDITIONS: Prior to VFR flight in a UH-1 helicopter 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 per AR 95-1.

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

4. Select the course(s) and altitude(s) that best ensure mission completion, and correctly compute magnetic heading(s) ±5 degrees.

5. Determine the 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 per 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. Based on the information provided by the other RCM, 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 information about the weather. After ensuring 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 area, and allow for changes in routing that may be required because of the weather or terrain. Select the course(s) and altitude(s) that will best facilitate mission accomplishment. Use a CPU-26A/P computer/Weems plotter (or equivalent) to plot the flight, and determine the magnetic heading, ground speed, and ETE for each leg. Compute total distance and flight time, and calculate the required fuel using the appropriate charts in the aircraft operator's manual. 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 the allowable limits for the entire flight. Complete DD Form 175 (Military Flight Plan) or an equivalent form, and file the flight plan with the appropriate agency.

NIGHT OR NVG CONSIDERATIONS: More detailed planning is necessary at night because of visibility restrictions. Checkpoints used during the day may not be suitable for night or NVG use.

REFERENCES:

Aircraft operator's manual
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

TASK 1002

TASK: Plan an IFR flight.

CONDITIONS: Prior to IFR flight in a UH-1 helicopter or a UH1FS 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 per AR 95-1.

3. Check applicable publications, and without error, determine if any restrictions 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 off-airway, determine the course(s) ±5 degrees.

5. Select altitude(s) that avoid the icing level 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 ±1 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 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 per 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. Based on the information provided by the other RCM, 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 information about the weather. Compare destination forecast and approach minimums, and determine if an alternate airfield is required. Ensure that the flight can be completed per AR 95-1. Check the NOTAMs and the Army Aviation Flight Information Bulletin for any restrictions that apply to the flight. Obtain charts that cover the entire flight area, and allow for changes in routing or destination that may be required because of the weather. Select the route(s) or course(s) and altitude(s) that will best facilitate mission accomplishment. When possible, select preferred routing. Use a CPU-26A/P computer/Weems plotter (or equivalent) to plot the flight, and 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 the aircraft operator's manual. Ensure that the weight and balance forms kept in the aircraft logbook apply to aircraft load and CG limitations per AR 95-3. Verify that the aircraft weight and CG will remain within the 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:

Aircraft operator's manual
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

TASK 1003

TASK: Confirm or prepare DD Form 365-4 (Weight and Balance Clearance Form - Tactical/Transport).

CONDITIONS: Given aircraft basic weight and configuration, cargo weight and dimensions crew and passenger weights, TM 55-1500-342-23, the aircraft operator's manual, and a completed or blank copy of the DD Form 365-4.

STANDARDS:

1. Confirm the accuracy of computations on DD Form 365-4 and, if required, correctly complete a DD Form 365-4 to reflect actual aircraft loading.

2. Confirm the accuracy and currency of the logbook copies of applicable DD Forms 365-4 per AR 95-3.

3. Confirm that the aircraft will remain within weight and CG limitations for the duration of the flight.

4. Correctly perform crew coordination actions.

DESCRIPTION:

The PC will confirm, or direct the other crew member(s) to Confirm, that current and completed DD Forms 365-4 are in the aircraft. From these forms, the PC will verify that the aircraft weight and CG will remain within the allowable limits for the entire flight. If these forms are not available, the PC will complete a DD Form 365-4 to reflect the actual loading of the aircraft.

REFERENCES:

Aircraft operator's manual
AR 95-1
AR 95-3
TM 55-1500-342-23

TASK 1004

TASK: Prepare DA Form 7243-R (UH-1 Performance Planning Card).

CONDITIONS: Given data on DD Form 365-4 (Weight and Balance Clearance Form - Tactical/Transport), aircraft operator's manual, environmental Conditions and a blank DA Form 7243-R.

STANDARDS: Correctly compute performance planning data according to procedures given in the aircraft operator's manual and the description below.

DESCRIPTION:

1. Crew Actions. The PC will ensure that aircraft performance data to complete the mission are available and that aircraft limitations will not be exceeded. The most accurate performance data can be obtained by using existing conditions. Predicted hover torque should be determined using the conditions forecast for the time of departure. The PC may direct the other RCM to assist in completing these data as necessary.

2. Procedures.

a. DA Form 7243-R is used as an aid to organize performance data; this form must be used for evaluations. Instructions for completing the PPC are provided below; the numbered paragraphs coincide with the circled numbers on the PPC in Figures 6-6 and 6-7.

b. The same PPC data will suffice for consecutive takeoffs and landings when aircraft gross weight or environmental conditions have not increased significantly; that is, 200 pounds gross weight, 5 degrees Celsius, or 500 feet PA.

NOTE: The Current Conditions section of the PPC, items (1) through (14), is based on conditions existing at initial takeoff (departure). Crew members use this information to validate the PPC by comparing the aircraft's actual performance to the planned performance. If the current conditions are the same as the maximum conditions for the mission period, this section need not be completed.

(1) P A .* Record the current PA forecast for the time of departure.

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*This item is mandatory for each flight. The PC will compute other data when required.

(2) FAT.* Record the current FAT forecast for the time of departure.

(3) Takeoff GWT.* Record the current takeoff gross weight for the time of departure.

(4) Load.* Record the maximum weight of the load(s) expected during the mission.

(5) Cal Factor.* Record the calibration factor (data plate torque).

(6) Fuel. Record the takeoff fuel weight for the time of departure.

(7) Max Torque Avail.* Using current conditions and the Maximum Torque Available (30-minute operation) chart, record the chart value and compute and record the indicated maximum torque available.

NOTE: The torque correction value (chart value to indicated), obtained from (7) above, may be applied to all subsequent torque values on the PPC.

(8) Max Allowable GWT (IGE).* Using current conditions and the Hover Ceiling chart, compute and record the maximum allowable gross weight (IGE). If the 5-foot skid height line is not intersected record the maximum allowable gross weight (IGE) as 9,500 pounds.

(9) Max Allowable GWT (OGE). Using current conditions and the Hover Ceiling chart, compute and record the maximum allowable gross weight (OGE).

(10) Predicted Hover Torque.* Using current conditions, the Hover Power Required chart, and the takeoff gross weight, compute and record the torque required to hover at a 5-foot skid height (or as required).

(11) Predicted Hover Torque (OGE). Using current conditions, the Hover Power Required chart, and the takeoff gross weight, compute and record the torque required to hover at a 50-foot. skid height (OGE).

(12) Go/No-Go Torque (IGE).* Using the Hover Power Required chart, the maximum allowable gross weight (IGE), and a 5-foot skid height (or as required), record the go/no-go torque (IGE).

(13) Go/No-Go Torque (OGE). Using the Hover Power Required chart, the maximum allowable gross weight (OGE), and a 5-foot skid height, record the go/no-go torque (OGE). (For external load operations, use a skid height line that will ensure a 5-foot load height.)

(14) Directional Control Margin.* Using Sheet 1 of the Control Margin chart and the takeoff gross weight, record the maximum right crosswind component (90 degrees) that may be encountered and still maintain a 10 percent DCM. If the highest reported or forecast wind (steady or gust) is above the DCM (right crosswind) value, the DCM may be less than 10 percent. During hover or slow-speed operations with a right crosswind approximately 35 to 150 degrees from the nose of the aircraft, a less than 10 percent DCM may be available. During flights with winds greater than 10 knots and approximately 100 to 260 degrees from the nose of the aircraft, a reduction of longitudinal cyclic control may be experienced. The crew should avoid hover or slow-speed operations with wind from these quadrants. (Sheet 2 of the Control Margin chart presents areas to avoid during crosswinds and tailwinds.)

NOTE: The Maximum Conditions section of the PPC, items (15) through (24), is used to predict the aircraft's performance capabilities under the maximum PA, temperature, and winds forecast for the mission.

(15) PA.* Record the maximum PA forecast for the mission period.

(16) FAT.* Record the maximum FAT forecast for the mission period.

(17) Load.* Record the maximum weight of the load(s) expected during the mission.

(18) Fuel. Record the takeoff fuel weight.

(19) Max Torque Avail.* Using maximum conditions, compute the maximum torque available as described in (7) above.

(20) Max Allowable GWT (IGE).* Using maximum conditions, compute the maximum allowable gross weight (IGE) as described in (8) above.

(21) Max Allowable GWT (OGE). Using maximum conditions, compute the maximum allowable gross weight (OGE) as described in (9) above.

(22) **Go/No-Go Torque (IGE).*** Using the Hover Power Required chart, the maximum allowable gross weight (IGE), and a 5-foot skid height (or as required), record the go/no-go torque (IGE).

(23) **Go/No-Go Torque (OGE).** Using the Hover Power Required chart, the maximum allowable gross weight (OGE), and a 5-foot skid height, record the go/no-go torque (OGE). (For external load operations, use a skid height line that will ensure a 5-foot load height.)

(24) **DCM.*** Using current conditions, compute the DCM as described in (14) above.

NOTE: The Cruise Data section, items (25) through (37), is used to predict the aircraft's performance at a planned cruise altitude and airspeed. For operations that involve several changes in Conditions, the RCM is expected to use his best judgment in selecting performance criteria.

(25) **PA.** Record the planned cruise PA.

(26) **FAT.** Record the forecast FAT at cruise altitude.

(27) **Aircraft GWT.** Record the aircraft gross weight for anticipated cruise conditions.

(28) **Cruise IAS.*** Using the Cruise chart, record the indicated airspeed for anticipated cruise conditions.

(29) **Cruise Ind Torque.** Using the Cruise chart, in record the indicated torque required to maintain the airspeed (28) above.

(30) **Cruise Fuel Flow.*** Using the Cruise chart, record the predicted fuel flow at cruise IAS.

(31) **Max End or R/C IAS.** Using the Cruise chart, record the maximum endurance or maximum rate of climb IAS.

(32) **Max End or R/C Ind Torque.** Using the Cruise chart, record the indicated torque required to maintain maximum endurance or maximum rate of climb IAS.

(33) **Max End or R/C Fuel Flow.** Using the Cruise chart, record the predicted fuel flow at maximum endurance or maximum rate of climb IAS.

(34) Max Range IAS. Using the Cruise chart, record the maximum range IAS.

(35) Max Range Ind Torque. Using the Cruise chart, record the indicated torque required to maintain maximum range IAS.

(36) Max Range Fuel Flow. Using the Cruise chart, record the predicted fuel flow at maximum range IAS.

(37) Vne IAS.* Using the Airspeed Operating Limits chart, record the maximum allowable airspeed at cruise altitude.

NOTE: The Fuel Management section, items (38) through (42), is used to record in-flight fuel consumption. The use of this section is not mandatory. (Task 1023 discusses fuel management procedures.)

(38) Start. Record the indicated fuel weight and clock time to initiate the fuel consumption check.

(39) Stop. Record the indicated fuel weight and clock time to close the fuel consumption check.

(40) PPH. Record the computed fuel consumption rate in pounds per hour.

(41) Reserve. Record the computed indicated fuel weight and clock time to meet the required fuel reserve.

(42) Burnout. Record the computed and clock time at zero fuel weight.

NOTE: The Weight Computation section, items (43) through (49), is used to compute an increase in aircraft weight and load. Critical mission requirements may require the addition of passengers or equipment during the flight. The use of this section is not mandatory. However, the PC must ensure that the weight and balance limits are not exceeded. (Task 1003 discusses the weight and balance limits.)

(43) Basic Weight. Record the basic aircraft weight from DD Form 365-4.

(44) Crew and Flt Equip Weight. Record the crew and flight equipment weight from DD Form 365-4 or as determined by the crew.

(45) Mission Equip Weight. Record the mission equipment weight (for example, weapons) from DD Form 365-4 or as determined by the crew.

(46) Operating Weight. Record the operating weight from DD Form 365-4 or as determined by the crew. (Add basic weight, crew and flight equipment weight, and mission equipment weight to obtain operating weight.)

(47) Fuel Weight. Record the fuel weight from DD Form 365-4 or the current fuel weight.

(48) Pax, Baggage Cargo, and Ammo Weight. Record the weight of these items from DD Form 365-4 or weight as determined by the crew.

(49) Takeoff GWT. Record the takeoff gross weight by adding operating weight, fuel weight, and additional pax, baggage, cargo, and ammo weights.

NOTE 1: The Remarks section is used to record pertinent performance planning remarks.

NOTE 2: Tabular performance data charts are used to aid in performance planning. They provide an easy-to-use device in the cockpit and may be used during flights that require current data.

REFERENCES:

Aircraft operator's manual
AR 95-1
AR 95-3
FM 1-203
TM 55-1500-342-23

UH-1 PERFORMANCE PLANNING CARD

For use of this form, see TC 1-211; the proponent agency is TRADOC.

CURRENT CONDITIONS

PA	(1)	FAT	(2)
TAKEOFF GWT	(3)	LOAD	(4)
CAL FACTOR	(5)	FUEL	(6)

	CHART VALUE	IND TRQ
MAX TORQUE AVAIL	(7)	
MAX ALLOWABLE GWT (IGE)	(8)	
MAX ALLOWABLE GWT (OGE)	(9)	
PREDICTED HOVER TORQUE	(10)	
PREDICTED HOVER TORQUE (OGE)	(11)	
GO/NO-GO TORQUE (IGE)	(12)	
GO/NO-GO TORQUE (OGE)	(13)	
DCM	(14)	

MAXIMUM CONDITIONS

PA	(15)	FAT	(16)
LOAD	(17)	FUEL	(18)

	CHART VALUE	IND TRQ
MAX TORQUE AVAIL	(19)	
MAX ALLOWABLE GWT (IGE)	(20)	
MAX ALLOWABLE GWT (OGE)	(21)	
GO/NO-GO TORQUE (IGE)	(22)	
GO/NO-GO TORQUE (OGE)	(23)	
DCM	(24)	

DA FORM 7243-R, NOV 92

Figure 6-6. DA Form 7243-R (front)

CRUISE DATA				
PA (25)		FAT (26)	GWT (27)	
		IAS	IND TRQ	FUEL FLOW
CRUISE		(28)	(29)	(30)
MAX END OR R/C		(31)	(32)	(33)
MAX RANGE		(34)	(35)	(36)
VNE		(37)		

FUEL MANAGEMENT				
START	STOP	PPH	RESERVE	BURNOUT
(38)	(39)	(40)	(41)	(42)

WEIGHT COMPUTATION	
BASIC WEIGHT	(43)
CREW AND FLT EQUIP WEIGHT	(44)
MISSION EQUIP WEIGHT	(45)
OPERATING WEIGHT	(46)
FUEL WEIGHT	(47)
PAX, BAGGAGE, CARGO, AND AMMO WEIGHT	(48)
TAKEOFF GWT	(49)

REMARKS

REVERSE, DA FORM 7243-R, NOV 92

Figure 6-7. DA Form 7243-R (back)

TASK 1005

TASK: Perform preflight inspection.

CONDITIONS: Given a UH-1 helicopter and the aircraft operator's manual and checklist.

STANDARDS:

1. Rated.

a. Without error, perform the preflight inspection according to the checklist.

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

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Complete all before-preflight and preflight duties per the aircraft checklist and the unit SOP.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will ensure that the preflight inspection is conducted according to the aircraft checklist. He may direct that the other crew members inspect all or designated sections of the aircraft. The PC will verify that all preflight checks have been completed. He also will ensure that the crew members enter the appropriate information on DA Forms 2408-12 and 2408-13.

2. The other crew members will complete the preflight inspection as directed and report to the PC whether the aircraft or assigned sections meet required preflight inspection criteria.

3. If time permits, the crew will accomplish the preflight inspection during daylight hours.

4. The PC will ensure that a walk-around inspection is completed prior to flight.

NOTE: The aircraft operator's manual contains details about the procedures outlined in the aircraft checklist.

NIGHT OR NVG CONSIDERATIONS: If crew members perform the preflight inspection during the hours of darkness, they should use a flashlight with an unfiltered (white) lens to supplement available lighting. (Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens.) TC 1-204 contains details on the preflight inspection at night.

REFERENCES:

Aircraft logbook
Aircraft operator's manual
AR 95-1
DA Pamphlet 738-751
Operator's and crewmember's checklist
TC 1-204

TASK 1006

TASK: Perform a preventive maintenance service.

CONDITIONS: Given a UH-1 helicopter and appropriate publications.

STANDARDS: Without error, check all items per the appropriate maintenance checklist.

DESCRIPTION: Using the appropriate maintenance checklist, conduct a preventive maintenance service. Correctly enter the appropriate information in the aircraft logbook. If time permits, accomplish the maintenance inspection during daylight hours.

NIGHT OR NVG CONSIDERATIONS: If crew members perform the preventive maintenance service during the hours of darkness, they should use a flashlight with an unfiltered (white) lens to supplement the available lighting. (Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens.)

REFERENCES:

Aircraft logbook
Aircraft operator's manual
DA Pamphlet 738-751
FM 1-500
FM 10-68
TC 1-204
TM 55-1520-210-PM
TM 55-1520-210-PMD
Unit SOP

TASK 1007

TASK: Perform before-starting engine through engine shutdown checks.

CONDITIONS: In a UH-1 helicopter or a UH1FS and given the aircraft checklist.

STANDARDS:

1. Rated.

a. Without error, perform procedures and checks according to the aircraft checklist.

b. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Before-Starting Engine, Engine-Start, Run-Up, and Before-Takeoff Checks.

a. Each crew member will complete the required checks pertaining to his assigned crew station per the aircraft checklist.

b. The PC will determine which pilot is to monitor the flight controls and accomplish the required checks and which crew member is to read the checklist.

c. Both aviators and/or the crew chief, if available, will clear the area around the aircraft prior to engine start.

d. Before starting the engine, the crew member(s) will ensure that all appropriate internal and external lights are operational and properly set for night considerations or poor weather conditions. They must ensure that the lighting levels are high enough for the crew to see the instruments easily and to start the engine without exceeding operating limitations.

e. During HIT check procedures, the P* will monitor the flight controls while maintaining visual reference outside. The P will conduct the checks according to the HIT checklist. The CE

shall perform duties as directed by the PC while maintaining airspace surveillance.

f. The PC will ensure that the before-takeoff checks are completed according to the aircraft checklist. The P and CE will announce when ready for takeoff and will remain focused outside the aircraft to assist in clearing and to provide adequate warning of obstacles. The P will announce when his attention is focused inside the aircraft; for example, when responding to system malfunctions and when limitations may be exceeded during the maneuver.

2. Before-Landing check

a. The PC will ensure that the before-landing check is completed according to the aircraft checklist.

b. The P will confirm and announce the completion of the before-landing check.

c. The CE will confirm and announce that passengers and mission equipment are secure.

3. Aircraft Shutdown Check.

a. The PC will ensure that the aircraft shutdown check is completed according to the aircraft checklist.

b. The P will announce and accomplish aircraft shutdown according to the aircraft checklist.

c. The P* will monitor the flight controls and scan inside and outside the aircraft.

NOTE 1: The crew member reading the checklist will use the callout and response method. The crew member performing the check will answer with the appropriate response. For example, for the callout "Position lights," the response might be "Position lights on steady" or "Position lights on bright."

NOTE 2: The aircraft operator's manual contains details about the procedures outlined in the aircraft checklist.

NIGHT OR NVG CONSIDERATIONS: Lighting levels must be high enough for the aviator to easily see the instruments and to start the engine without exceeding operating limitations. The P and CE should assist in clearing the aircraft and in completing all required checks, as necessary.

REFERENCES:

Aircraft operator's manual
AR 95-1
AR 385-95
DA Pamphlet 738-751
Engine HIT Log
Operator's and crewmember's checklist
unit SOP

TASK 1010

TASK: Operate aviation life support equipment.

CONDITIONS: Given the appropriate ALSE for the mission.

STANDARDS:

1. Correctly use personal and mission ALSE.

2. Properly assist passengers in the use of ALSE.

3. Properly secure required ALSE in the aircraft per FM 1-302, the aircraft operator's manual, and the unit SOP.

DESCRIPTION:

1. Preparation. After the mission briefing, obtain the mission ALSE from the ALSE technician. Ensure that the equipment is serviceable per FM 1-302. Secure the required ALSE in the aircraft per FM 1-302, the aircraft operator's manual, and the unit SOP. Brief passengers in the use of the ALSE. (Task 1071 discusses the passenger briefing.)

2. Use. Use the mission ALSE as required by the mission environment and the unit SOP.

REFERENCES:

Aircraft operator's manual
AR 95-3
FM 1-302
Operator's and crewmernber's checklist
TC 1-204
TM 5-4220-202-14
TM 55-1680-317-23&P
TM 55-1680-351-10
Unit SOP

TASK 1014

TASK: Maintain airspace surveillance.

CONDITIONS: In a UH-1 helicopter.

STANDARDS:

1. Immediately inform the P* and P of all air traffic or obstacles that pose a threat to the aircraft.

2. Correctly perform crew coordination actions.

DESCRIPTION: Maintain close surveillance of the airspace surrounding the aircraft. Inform the P* and P immediately of air traffic or obstacles that pose a threat to the aircraft. Call out the location of traffic or obstacles by the clock and distance method. (The 12 o'clock position is at the nose of the aircraft.) Give distance in miles or fractions of miles for air traffic and in feet for ground obstacles. When reporting air traffic, specify the type of aircraft and, if known, the model.

NOTE: When additional NCMS are assigned to the flight, their specific duties will be outlined by the PC during the mission briefing.

NIGHT AND NVG CONSIDERATIONS: The use of proper scanning techniques will assist the crew in detecting obstacles and in avoiding spatial disorientation.

REFERENCES:

Aircraft operator's manual
FM 1-301
FM 1-402
FM 17-95
FM 55-450-3
FM 55-450-4
FM 55-450-5
Joint Pub 3-50
TC 1-201
TC 1-204
Unit SOP

TASK 1016

TASK: Perform hover power check.

CONDITIONS: In a UH-1 helicopter or a UH1FS, at an appropriate hover height, and with performance planning information available.

STANDARDS:

1. Rated.

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

b. Maintain a stationary hover ±1 foot, and without error, determine that sufficient power is available to complete the mission.

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Perform duties as briefed by the PC.

b. Properly maintain airspace surveillance.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will announce his intent to bring the aircraft to a hover. He will remain focused outside the aircraft during the maneuver and will announce when the aircraft is stabilized at the desired hover altitude.

2. The P and CE will announce when ready for takeoff and will remain focused outside the aircraft to assist in clearing and to provide adequate warning of obstacles. They will acknowledge clear (left, right, rear, and above, as appropriate).

3. The P* should use a 5-foot stationary hover when performing this task unless the mission or terrain constraints dictate otherwise. If another hover height is required, he should use that height to compute go/no-go torque and predicted hover torque.

4. The P will monitor the aircraft instruments and verify the power check. He will compare the actual performance data to that computed and announce the results to the P*. Anytime the

load or environmental conditions increase significantly (200 pounds gross weight, 5 degrees Celsius, or 500 feet PA), the crew members will perform additional hover power checks and, if necessary recompute all values.

5. The PC will determine whether the aircraft is capable of completing the assigned mission and will ensure that aircraft limitations will not be exceeded.

6. The P will announce when the hover power check is completed.

NOTE: If the torque required to maintain a stationary hover does not exceed the go/no-go torque OGE, any maneuver requiring OGE/IGE power or less may be attempted. If the torque required to maintain a stationary hover exceeds the go/no-go torque OGE but does not exceed the go/no-go torque IGE, only IGE maneuvers may be attempted.

NIGHT OR NVG CONSIDERATIONS: The P and CE must clear the aircraft, and the P must monitor the instruments as appropriate. Crew members should use proper scanning techniques to avoid spatial disorientation.

REFERENCES:

Aircraft operator's manual
Operator's and crewmember's checklist
TC 1-204

TASK 1017

TASK: Perform hovering flight.

CONDITIONS: In a UH-1 helicopter with the before-takeoff check completed and the aircraft cleared.

STANDARDS:

1. Rated.

a. Takeoff to a hover.

(1) Establish a vertical ascent to a hover altitude of 3 feet, ±1 foot.

(2) Maintain heading ±10 degrees.

(3) Do not allow drift to exceed 1 foot.

b. Hovering flight.

(1) Stationary.

(a) Maintain altitude of 3 feet, ±1 foot.

(b) Maintain heading ±10 degrees.

(c) Do not allow drift to exceed 2 feet.

(2) Forward, sidewrad, or rearward.

(a) Maintain altitude of 3 feet, ±1 foot.

(b) Maintain heading ±10 degrees.

(c) Maintain a constant hover speed.

(d) Maintain ground track within 2 feet.

c. Hovering turns.

(1) Maintain altitude of 3 feet, ±1 foot.

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

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

d. Landing from a hover.

(1) Execute a smooth, controlled descent with no lateral or rearward drift at touchdown.

(2) Maintain heading ±10 degrees.

e. Crew coordination. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. The P* will announce his intent to perform a specific hovering flight maneuver and will remain focused outside the aircraft to monitor altitude and avoid obstacles.

b. All crew members will assist in clearing the aircraft and will provide adequate warning of obstacles, unusual drift, or altitude changes. They will announce when their attention is focused inside the aircraft.

2. Procedures.

a. Takeoff to a hover. With the collective fully down, place the cyclic in the neutral position. Increase the collective with a smooth, positive pressure. Apply pedals to maintain heading, and coordinate the cyclic for a vertical ascent. As the aircraft leaves the ground, check for the proper control response and the aircraft CG. Perform a hover check according to the aircraft checklist.

b. Hovering flight. Adjust the cyclic to maintain a stationary hover or to move in the desired direction. control heading with the pedals, and maintain altitude with the collective. The rate of movement should be that of a brisk walk or less. Should circumstances dictate velocities in excess of an apparent brisk walk, increase hover altitude and remain within sideward or rearward velocity limitations as specified in the aircraft operator's manual. To return to a stationary hover, apply cyclic in the opposite direction while maintaining altitude with the collective and heading with the pedals.

c. Hovering turns. Apply pressure to the desired pedal to begin the turn. Use pressure and counterpressure on the pedals to maintain a constant rate of turn. Coordinate cyclic control to maintain position over the pivot point while maintaining altitude with the collective. (Hovering turns can be made around the vertical axis, nose, or tail of the aircraft. However, turns other than about the mast will increase the turn radius proportionately.)

d. Landing from a hover. From a stationary hover, lower the collective to effect a smooth descent to touchdown. Make necessary corrections with the pedals and cyclic to maintain a constant heading and position. On ground contact, ensure that the aircraft remains stable. Continue decreasing the collective smoothly and steadily until the entire weight of the aircraft rests on the ground, and then neutralize the pedals and cyclic. If sloping conditions are suspected, see Task 1032.

NIGHT OR NVG CONSIDERATIONS: Movement over areas of limited contrast, such as tall grass, water, or desert, tends to cause spatial disorientation. To avoid spatial disorientation, the crew should seek hover areas that provide adequate contrast and use proper scanning techniques. If disorientation occurs, the P* should apply sufficient power and execute a takeoff. If a takeoff is not feasible, he should try to maneuver the aircraft forward and down to the ground to limit the possibility of touchdown with sideward or rearward movement.

REFERENCES:

Aircraft operator's manual
FM 1-203
TC 1-204

TASK 1018

TASK: Perform VMC takeoff.

CONDITIONS: In a UH-1 helicopter with the before-takeoff check completed.

STANDARDS:

1. **Rated.**

a. Clear the aircraft.

b. When making a takeoff from a hover, maintain hover altitude ±1 foot.

c. Maintain takeoff heading ±10 degrees.

d. Maintain ground track alignment with the takeoff direction with minimum drift.

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

f. Accelerate to the desired airspeed ±10 knots.

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

h. Maintain takeoff power until reaching the desired airspeed ±10 knots.

i. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.**

a. The P* will remain focused outside the aircraft throughout the maneuver to provide obstacle clearance. He will announce whether the takeoff is from the ground or from a hover and his intent to abort or alter the takeoff.

b. The P and CE will announce when ready for takeoff and will focus their attention primarily outside the aircraft to assist in clearing and to provide adequate warning of obstacles.

The P will announce when his attention is focused inside the aircraft; for example, when responding to system malfunctions and when limitations may be exceeded during the maneuver.

c. The PC will determine the direction of takeoff by analyzing the tactical situation, the Wind, the long axis of the takeoff area, and the lowest obstacles. The P and CE will select reference points to assist in maintaining the takeoff flight path. The P* will coordinate the cyclic and collective, as necessary to attain a constant angle of climb that will ensure obstacle clearance. The P will monitor power requirements and advise the P* if power limits are being approached. without exceeding aircraft limitations, the P* will use the power necessary to clear obstacles. After clearing obstacles, he will smoothly adjust the flight controls to make the transition to the desired terrain flight mode.

2. Procedures. The P* will perform the following actions:

a. From the around. Select reference points to maintain ground track. With the cyclic and pedals in the neutral position, increase power until the aircraft becomes "light on the skids." Continue applying power until the aircraft is airborne. As the aircraft leaves the ground, apply forward cyclic as required to avoid obstacles and to accelerate smoothly through ETL at an altitude appropriate for the terrain. Adjust the cyclic to continue the acceleration to the desired climb airspeed (see NOTE), and maintain the desired ground track. Make the required power adjustments to clear obstacles in the flight path and to obtain the desired rate of climb (see NOTE). Maintain heading with the pedals when below 50 feet AGL or until making the transition to terrain flight; then place the aircraft in trim. After obtaining the desired airspeed, adjust the cyclic as necessary to stop the acceleration. Adjust power as necessary to continue or to stop the rate of climb.

b. From a hover. Apply forward cyclic to accelerate the aircraft while applying power. Perform the rest of the maneuver as for a takeoff from the ground.

NOTE: For traffic pattern training, use power as required for a climb airspeed of 60/70 knots and a rate of climb of 500 FPM.

NIGHT OR NVG CONSIDERATIONS:

1. If sufficient illumination exists to view obstacles, the p* can accomplish the takeoff in the same way as he does a VMC takeoff during the day. If sufficient illumination does riot exist, he should perform an altitude-over-airspeed takeoff by applying takeoff power first followed by a slow acceleration to

ensure obstacle clearance. The P* may perform the takeoff from a hover or from the ground.

NOTE: Visual obstacles, such as shadows, should be treated the same as physical obstacles.

2. The P* should maintain the takeoff power setting until reaching climb airspeed. He will adjust power as required to establish the desired rate of climb and airspeed. The P should alternate his attention between cross-checking instruments and assisting in obstacle avoidance. The P* and CE should maintain orientation outside the aircraft and concentrate on obstacle avoidance. The P should make internal checks.

3. Reduced visual references during the takeoff and throughout the ascent at night may make it difficult to maintain the desired ground track. The crew should know the surface wind direction and velocity. This will assist the P* in maintaining the desired ground track.

4. The crew must use proper scanning techniques to avoid spatial disorientation.

REFERENCES:

Aircraft operator's manual
FM 1-202
FM 1-203
Operator's and crewmember's checklist
TC 1-204

TASK 1020

TASK: Perform simulated maximum performance takeoff.

CONDITIONS: In a UH-1 helicopter with the hover power and before-takeoff checks completed and the aircraft cleared.

STANDARDS:

1. Rated.

a. Prior to 100 feet AGL--

(1) Maintain takeoff heading ±10 degrees.

(2) Maintain ground track alignment with takeoff direction with minimum drift.

(3) Maintain power, as required, +3 to -0 psi above hover power.

(4) Maintain a 40-knot attitude until clearing obstacles.

b. When above 100 feet AGL--

(1) Maintain aircraft in trim.

(2) Maintain climb airspeed ±10 HAS.

(3) Maintain rate of climb ±100 FPM.

(4) Maintain ground track alignment with takeoff direction with minimum drift.

(5) Maintain takeoff power until reaching 10 knots prior to climbout airspeed (60/70 knots).

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft during the maneuver. He will announce when he initiates the maneuver and his intent to abort or alter the takeoff.

2. The P will announce when ready for takeoff and will remain focused outside the aircraft to assist in clearing and to provide adequate warning of obstacles. The P and CE will announce when their attention is focused inside the aircraft; for example, when monitoring and calling out torque.

3. The P* will perform the following actions: Align the helicopter with the desired takeoff direction. Select reference points to maintain ground track. Place the cyclic in a neutral position, smoothly increase the collective and maintain heading with the pedals. As the aircraft leaves the ground, simultaneously increase the collective to obtain the power necessary to clear obstacles safely (5 psi torque above hover power for training). Do not exceed aircraft limitations. Maintain takeoff heading with the pedals and a 40-knot attitude and ground track with the cyclic. Maintain the required power until clearing the obstacles. At 100 feet AGL or after clearing obstacles, apply cyclic to attain an attitude that will result in the desired climb airspeed. Maintain the aircraft in trim. Ten knots prior to reaching climb airspeed, adjust the power to establish the desired rate of climb.

NOTE 1: This is a training maneuver only. It simulates aircraft operations at or near maximum allowable gross weight or at a density altitude where maximum power available represents just enough power to take off and clear obstacles. This maneuver should not be confused with a confined area or terrain flight takeoff.

NOTE 2: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS:

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

2. The crew must use proper scanning techniques to avoid spatial disorientation.

REFERENCES :

Aircraft operator's manual
FM 1-202
FM 1-203
Operator's and crewmember's checklist
TC 1-204

TASK 1022

TASK: Perform traffic pattern flight.

CONDITIONS: in a UH-l helicopter; given altitudes, airspeeds, and traffic pattern headings; and with the aircraft cleared.

STANDARDS:

1. Rated.

a. Maintain rate of climb or descent ±100 FPM. (with NVG, mantain the appropriate rate of climb.)

b. Roll out on desired heading ±10 degrees.

c. Maintain the aircraft in trim.

d. Maintain airspeed ±10 KIAS. (With NVG, use the recommended airspeed in NOTE 2.)

e. Maintain altitude ±100 feet. (With NVG, the recommended maximum altitude is 200 feet AHO.)

f. Maintain ground track alignment.

g. Without error, complete the before-landing check according to the aircraft checklist.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft while in the traffic pattern. He will announce and clear each turn in the pattern. He also will announce the type of approach planned.

2. The P and CE will assist in clearing the aircraft in the traffic pattern and will provide adequate warning of traffic and obstacles. They will announce when their attention is focused inside the aircraft; for example, when calling out the before-landing check.

3. The P* will maneuver into position to enter the downwind leg midfield at a 45-degree angle (or according to local procedures), at traffic pattern altitude, and at the proper airspeed.

He my use a straight-in or base-leg entry. on downwind, or as appropriate, the P will complete the before-landing check. Prior to turning base, the P* will reduce power and airspeed as required and initiate a descent. If performing a straight-in or base-leg entry, he will reduce airspeed at a point comparable to that for a normal approach. He will turn base and final legs, as appropriate, to maintain the desired ground track and will execute the desired approach.

4. For a closed traffic pattern after takeoff, the P* will climb straight ahead at climb airspeed to the appropriate altitude, turn to crosswind, and continue the climb. He will initiate the turn to downwind as required to maintain the desired ground track. He will adjust attitude and then power, as required, to maintain traffic pattern altitude and airspeed.

NOTE 1: All crew members will clear the aircraft throughout the traffic pattern.

NOTE 2: During training, the recommended airspeed is 60/70 KIAS on crosswind and base legs and 80/90 KIAS on the downwind leg. The maximum recommended bank angle is 30 degrees throughout the traffic pattern.

NOTE 3: Traffic pattern flight does not always mean a pattern at an airfield. A properly briefed pattern in a field environment will suffice.

WARNING

The P* must not allow himself to become fixated on the aircraft instruments. His primary focus should be outside the aircraft.

NIGHT OR NVG CONSIDERATIONS:

1. The P* should focus his attention outside the aircraft on the landing area location and should concentrate on obstacle avoidance. The P should make all internal cockpit checks.

2. After takeoff (when wearing NVG), the P* will attain coordinated flight before initiating the turn to the downwind leg. He will initiate the turn to downwind and adjust the pedals, as necessary, to maintain the aircraft in trim. He will maintain a continuous, coordinated turn to the downwind leg and establish airspeed and altitude as directed. He will maintain

ground track as required. He will cross-reference the heading indicator/selectected reference points to parallel the approach course. The P will complete the before-landing check. The P* will initiate the turn from downwind when in a position to make a continuous coordinated turn to the final approach course.

REFERENCES:

Aircraft operator's manual
DOD FLIP
FM 1-203
Operator's and crewmember's checklist
TC 1-204
Unit SOP

TASK 1023

TASK: Perform fuel management procedures.

CONDITIONS: In a UH-1 helicopter or a UH1FS.

STANDARDS:

1. Verify that the required amount of fuel is on board at the time of takeoff.

2. Correctly initiate an in-flight fuel consumption check within 10 minutes after leveling off or entering into the mission profile.

3. Correctly compute the fuel consumption rate 15 to 30 minutes after taking the initial readings.

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

5. Frequently monitor the fuel quantity and consumption rate during the flight.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. The P will record the initial fuel figures, fuel flow computation, and burnout and reserve times. He will announce when he initiates the fuel check and when he completes the fuel check. The P also will announce the results of the fuel check.

b. The P* will acknowledge the results of the fuel check.

c. The PC will confirm the results of the fuel check.

d. If applicable, the P will announce when the fuel transfer switch is repositioned.

2. Procedures.

a. Before-takeoff fuel check. Determine the total fuel on board, and compare it with mission fuel requirements determined during premission planning. If the fuel on board is inadequate, have the aircraft refueled or abort or revise the mission.

b. Initial airborne fuel reading. After leveling off the aircraft or entering into the mission profile and setting the appropriate power, record the total fuel quantity and the time of reading.

c. Fuel consumption check. Record the remaining fuel and the time of reading 15 to 30 minutes after taking the initial airborne fuel reading. Compute and record the consumption rate, burnout time, and reserve entry time. Determine if the remaining fuel is sufficient to complete the flight with the required reserve. If the amount of fuel is inadequate, initiate an alternate course of action.

d. Fuel quantity and consumption. Periodically monitor the fuel quantity and consumption rate. If the fuel quantity or flow indicates a deviation from computed values, repeat the fuel consumption check to determine if the amount of fuel is adequate to complete the flight.

e. Auxiliary fuel management. The aircraft operator's manual outlines the procedures to be followed when auxiliary fuel tanks are used.

NIGHT OR NVG CONSIDERATIONS: The P should complete all duties associated with fuel management procedures. If the controls are transferred, the other aviator will verify fuel computations.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-240
TC 1-204
Unit SOP

TASK 1025

TASK: Navigate by pilotage and dead reckoning.

CONDITIONS: In a UH-1 helicopter and given the appropriate maps, plotter, computer, and flight log.

STANDARDS:

1. **Rated.**

   a. Maintain orientation within 500 meters.

   b. Arrive at checkpoints ±3 minutes of the adjusted ETA.

   c. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. After obtaining current weather forecasts, crew members will plan the flight by marking the route and appropriate check-points. They will compute the time, distance, and heading for each leg of the flight route.

2. The P* will focus his attention primarily outside the aircraft and respond to navigation instructions or cues given by the P. The P* will acknowledge commands issued by the P for the heading and airspeed changes necessary to navigate the desired course. The P* will announce significant terrain features to assist in navigation.

3. The P will direct the P* to change 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. He will announce all plotted wires prior to approaching their location. The P and CE will divide their attention between the outside and the inside of the aircraft. They will assist in clearing the aircraft and provide adequate warning to avoid traffic and obstacles.

4. During the flight, the P will use both pilotage and dead reckoning to maintain 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. He 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 flight legs. The P* will make heading corrections to maintain the desired course (ground track).

NIGHT OR NVG CONSIDERATIONS: More detailed flight planning is required when the flight is conducted at terrain flight altitudes, when visibility is reduced, or in the night or NVG environment.

REFERENCES:

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

TASK 1028

TASK: Perform VMC approach.

CONDITIONS: In a UH-1 helicopter with the before-landing check completed.

STANDARDS:

2. Rated.

a. Select a suitable landing area.

b. Establish the proper altitude to clear obstacles on final approach, and maintain entry altitude ±100 feet. (If in terrain flight or using NVG, there is no altitude standard.)

c. Establish entry airspeed ±10 KIAS. (If in terrain flight or using NVG, use the airspeed necessary for a safe approach.)

d. Maintain a constant approach angle to clear obstacles.

e. Maintain ground track alignment with the landing direction with minimum drift.

f. Maintain an apparent rate of closure appropriate for the conditions, normally not to exceed the speed of a brisk walk.

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

h. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft to provide obstacle clearance throughout the maneuver. He will announce when he begins the approach and whether the approach will terminate to a hover or to the ground. The P* also will announce the intended point of landing and any deviation to the approach, if required, to include go-around.

2. The P and CE will confirm the suitability of the area, assist in clearing the aircraft, and provide adequate warning of traffic and obstacles. If go-around is necessary, the P and CE will focus outside the aircraft for obstacle avoidance. The P will acknowledge any deviation during the approach. The P will announce when his attention is focused inside the aircraft; for example, when monitoring instruments or responding to system malfunctions.

3. The P* will perform the following actions:

a. **To a hover.** Determine an approach angle which 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 collective as necessary to establish and maintain the angle. Maintain entry airspeed until 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 while maintaining the aircraft in trim when above 50 feet AGL. Align the aircraft with the landing direction when below 50 feet AGL.

b. **To the ground.** 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 qround contact, ensure that the aircraft remains stable with all movement stopped. Smoothly reduce the collective to the fully down position, and neutralize the pedals and cyclic.

CAUTION

During the approach, if the P* loses visual contact (or it is apparent that he will lose visual contact) with the intended point of landing because of weather or environmental conditions (blowing dust, blowing snow), he will inform the crew and request assistance. If the P still has the intended point of landing in sight, he may take the controls and complete the approach. If the P does not have the intended point of landing in sight, the P* will perform a go-around.

NOTE 1: The P* should perform a go-around if a successful landing is doubtful or if he loses visual reference with the intended termination point. The P* should announce his intent to go around before reducing airspeed below ETL or before descending below the obstacles.

NOTE 2: During training, the recommended entry airspeed is 60/70 KIAS.

NOTE 3: Steep approaches can place the aircraft in potential settling-with-power conditions. The crew must be familiar with diagnosing and correcting these situations.

NOTE 4: FM 1-202 contains procedures for reducing the hazards associated with the loss of visual references during the landing because of blowing snow or dust.

NIGHT OR NVG CONSIDERATIONS:

1. Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. The rate of descent during the final 100 feet should be slightly slower than during the day to avoid abrupt attitude changes at low altitudes. After establishing the descent, the P* should reduce airspeed to approximately 50 knots until apparent ground speed and rate of closure appear to be increasing. He should progressively decrease the rate of descent and forward speed until termination.

2. The crew should be aware that surrounding terrain or vegetation may decrease contrast and cause depth perception to be degraded during the approach to the landing area. Before descending below obstacles, the crew should determine the need for artificial lighting.

3. Crew members must use proper scanning techniques to avoid spatial disorientation.

REFERENCES:

Aircraft operator's manual
FM 1-202
FM 1-203
Operator’s and crewmember’s checklist
TC 1-204

TASK 1030

TASK: Perform a shallow approach to a running landing.

CONDITION: In a UH-1 helicopter with a suitable landing area selected and the before-landing check completed.

STANDARDS:

1. **Rated.**

   a. Establish entry altitude ±100 feet.

   b. Establish entry airspeed ±10 KIAS.

   c. Maintain ground track alignment with the landing direction.

   d. Maintain a constant approach angle.

   e. Effect termination by maintaining alignment with the predetermined track ±5 degrees and by executing a smooth, controlled touchdown.

   f. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.**

   a. The P* will remain focused outside the aircraft to clear the aircraft throughout the approach and landing. He will announce the intended point of landing and any deviation from the approach.

   b. The P and CE will confirm the suitability of the area, assist in clearing the aircraft, and provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

2. **Procedure.** On find approach, determine an approach angle which allows safe obstacle clearance to arrive at the intended point of landing. Once the approach angle is intercepted, adjust the collective as necessary to establish and maintain

the angle. Maintain entry airspeed until apparent ground speed and rate of closure appear to be increasing. Maintain ground track alignment with the landing direction by maintaining the aircraft in trim above 50 feet AGL and aligning the aircraft with the landing direction below 50 feet AGL. Control the rate of descent at touchdown with the collective. Maintain aircraft attitude and larding alignment with the cyclic and heading with the pedals. The touchdown speed may vary from ETL to slightly above ETL as dictated by landing area conditions. After ground Contact, ensure the aircraft remains stable as the collective is lowered to reduce ground run. Once the aircraft has come to a complete stop, reduce the collective to the fully down position and neutralize the pedals and cyclic.

NIGHT OR NVG CONSIDERATIONS: Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. Therefore, 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.

REFERENCES:

Aircraft operator's manual
FM 1-202
FM 1-203
Operator’s and crewmember’s checklist
TC 1-204

TASK 1031

TASK: Perform confined area operations.

CONDITIONS: In a UH-1 helicopter with the before-larding check completed.

STANDARDS:

1. **Rated.**

a. Prior to the approach--

(1) Establish entry altitude ±100 feet.

(2) Establish entry airspeed ±10 KIAS.

(3) Properly perform a larding area reconnaissance.

b. During the approach--

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

(2) Maintain a constant approach angle.

(3) Maintain the appropriate rate of closure.

c. Properly perform a low reconnaissance.

d. Execute a smooth, controlled termination.

e. Prior to takeoff--

(1) Properly complete the ground reconnaissance and select a suitable takeoff path.

(2) Without error, perform a hover power check as required and complete the before-takeoff check.

(3) Properly clear the aircraft.

f. Prior to clearing obstacles--

(1) Maintain heading ±10 degrees.

(2) Maintain ground track alignment with minimum drift.

g. After clearing obstacles--

(1) Establish climb airspeed ±10 KIAS.

(2) Maintain rate of climb ±100 FPM.

(3) Maintain aircraft in trim.

(4) Maintain ground track alignment with selected takeoff path with minimum drift.

h. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew will evaluate the suitability of the area while approaching it. The P* will select and announce a flight path, an airspeed, and an altitude that afford the best observation of the landing area. He will remain focused outside the aircraft to evaluate the suitability of the area and the effects of wind. The P* will announce initiation of the approach and clear the aircraft throughout the approach arid landing. (If approaching the area in the terrain flight mode, the P* does not need to increase altitude to perform the landing area reconnaissance.) The P* will select a touchdown point in the landing area and announce whether he will terminate the approach to a hover or to the ground. He will announce any deviation from the approach, to include go-around (if required), and a tentative flight path for the departure.

2. The P and CE will confirm the suitability of the area, assist in clearing the aircraft, and provide adequate warning of traffic and obstacles. If go-around is necessary, the P and CE will focus their attention outside the aircraft to assist with obstacle avoidance. The P* will acknowledge completion of the before-landing check and any intent to deviate from the approach. The P will announce when his attention is focused inside the aircraft.

3. On final approach, the crew members will perform a low reconnaissance and confirm the suitability of the selected landing area. They will evaluate obstacles which constitute a possible hazard and will confirm the suitability of the departure path selected during the larding area reconnaissance. If visual

contact with the touchdown point is lost or if it becomes apparent that it will be lost, the P* will announce initiation of a go-around before reducing airspeed below ETL or before descending below the obstacles. The P* will maintain the aircraft in trim above the obstacles and maintain the landing area alignment below the obstacles. If he detects instability during the touchdown, he will reposition the aircraft.

4. Once in the confined area, the P* will perform a ground reconnaissance and announce his intent to conduct a specific hovering maneuver and the termination of the maneuver. Crew members will select the route to the takeoff point and ensure that there is adequate main rotor and tail rotor clearance while maneuvering. The PC will formulate the takeoff plan by evaluating the wind, obstacles, shape of the area, and aircraft load. The P* will announce his intent to take off and the direction of takeoff.

5. The P will call out the before-takeoff check and will verify a hover power check if required. The crew will clear the aircraft prior to and during the takeoff.

6. The P* will remain focused outside the aircraft during the maneuver. He will announce whether the takeoff is from the ground or from a hover and his intent to abort or alter the takeoff. The P* will coordinate the cyclic and collective as necessary to attain a constant angle of climb that will ensure obstacle clearance. He will maintain heading with the pedals.

7. The P and CE will announce when ready for takeoff and will remain focused outside the aircraft to assist in clearing and to provide adequate warning of obstacles. The P will announce when his attention is focused inside the aircraft; for example, when monitoring torque or performing map navigation.

CAUTION

During the approach, if the P* loses visual contact (or it is apparent that he will lose visual contact) with the intended point of landing because of weather or environmental conditions (blowing dust, blowing snow), he will inform the P and request his assistance. If the P still has the intended point of landing in sight, he will take the controls and complete the approach. If the P does not have the intended point of landing in sight, the P* will perform a go-around.

NOTE 1: Hover OGE power is required for this task.

NOTE 2: Depending on the simulated threat or type of terrain flight being conducted, this maneuver may be initiated from either a straight-in pattern or a circling pattern.

NOTE 3: The crew should plan to land to the ground if surface conditions permit. This will help reduce the effects of blowing dust, snow, or debris.

NIGHT OR NVG CONSIDERATIONS:

1. Confined areas are more difficult to evaluate at night because of low contrast. To perform successful confined area operations, crew members must know the various methods of determining the height of obstacles.

2. Before conducting confined area operations during unaided night flight, crew members must ensure that the searchlight or landing light (white light) is in the desired position. If they use the white light, their night vision will be impaired for several minutes. Therefore, they must exercise added caution if they resume flight before reaching full dark adaptation.

REFERENCES:

Aircraft operator's manual
FM 1-203
TC 1-201
TC 1-204
Unit SOP

TASK 1032

TASK: Perform slope operations.

CONDITIONS: In a UH-1 helicopter with the aircraft cleared.

STANDARDS:

1. Rated.

a. From memory, know the slope landing limitations described in the aircraft operator's manual.

b. Maintain heading ±5 degrees.

c. Do not exceed a 1-foot drift before and allow no drift after skid contact with the ground.

d. Execute a smooth, controlled descent and touchdown.

e. Execute a smooth, controlled ascent.

f. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

3. The P* will select a suitable area for slope operations and establish the helicopter over the slope. He will announce his intended landing area and any deviation from the landing or takeoff. If possible, he will orient the aircraft into the wind. He should not choose a degree of slope so great that large cyclic inputs are needed to accomplish the landing. The P* will establish the aircraft cross-slope, upslope, or downslope.

2. The P and CE will assist in clearing the aircraft and provide adequate warning of obstacles, unusual drift, or altitude changes. The P will confirm the suitability of the intended landing area. The P and CE will announce when their attention is focused inside the aircraft; for example, when monitoring the instruments.

3. The P* will reduce the collective to execute a smooth, controlled descent until the upslope skid contacts the ground. He will adjust the cyclic to maintain the aircraft in a level

attitude while maintaining heading with the pedals. He will continue reducing the collective and simultaneously apply cyclic into the slope to maintain the position of the upslope skid until both skids are firmly on the ground. The P* will coordinate the collective and cyclic to control the rate of attitude change when lowering the downslope skid to the slope. Once the collective is fully down, he will neutralize the cyclic and pedals. If cyclic or aircraft slope limits are reached before the aircraft is firmly on the ground, the P* will return the aircraft to a hover. He will select a new area where the slope is less steep and attempt another slope landing.

4. Prior to takeoff, the P* will announce initiation of an ascent. The P and CE will verbally assist in controlling drift and in avoiding obstacles. To execute a smooth, controlled ascent. the P* will apply cyclic into the slope to maintain the position of the upslope skid. He will smoothly increase collective to raise the downslope skid, maintain heading with the pedals, and adjust the cyclic to attain a level fuselage attitude. The P* will coordinate the flight controls as necessary to accomplish a vertical ascent to a hover while minimizing drift.

NOTE: Before conducting slope operations, RCMs must understand dynamic rollover characteristics.

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

REFERENCES:

Aircraft. operator's manual
FM 1-203
TC 1-204

TASK 1036

TASK: Perform hover OGE check.

CONDITIONS: In a UH-1 helicopter with hover OGE power available and the aircraft heading into the wind and cleared.

STANDARDS:

1. **Rated.**

a. Maintain position not to exceed 10 feet of drift during the ascent or descent or while at a hover.

b. Maintain heading ±10 degrees.

c. Establish a hover altitude of 50 feet or above surrounding obstacles whichever is higher, ±10 feet.

d. Maintain a constant rate of turn while performing a 360-degree left pedal turn.

e. Correctly determine if aircraft power and controllability are sufficient for maneuvers requiring OGE hover power.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION: The P* will announce his intent to ascend vertically to 50 feet or above surrounding obstacles whichever is higher. He will remain focused outside the aircraft during the entire maneuver to maintain obstacle clearance. The P* will execute a 360-degree left pedal turn. The P will monitor the EGT, torque, and other aircraft instruments, and the CE will maintain airspace surveillance. During the pedal turn, the P* will check the controllability of the aircraft. The P* will announce his intent to descend vertically to an IGE hover or to the ground.

NOTE 1: Hover OGE power is required for this task.

NOTE 2: The crew should make an OGE check anytime aircraft controllability or available power is in doubt.

NIGHT OR NVG CONSIDERATIONS:

1. The P* may have difficulty maintaining altitude and position when hovering above 25 feet without aircraft lights. (The barometric altimeter is not reliable for this maneuver.) If available, a radar altimeter should be used to assist in maintaining a constant altitude. Otherwise, such references as lights, tops of trees, or man-made objects above and to the front and sides of the aircraft should be used. By establishing a reference angle to these objects, the P* can detect changes in altitude by changes in his viewing perspective. 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 directions.

2. When wearing NVG, the crew must select an area with good ground contrast and several reference points at the same height as or at a greater height than the OGE hover. This will aid the P* in maintaining a constant altitude and position over the ground while making the required turns. The crew must use proper scanning techniques to ensure obstacle avoidance and tail rotor clearance and to avoid spatial disorientation. To prevent inadvertent aircraft movement while hovering OGE, the P* will remain focused outside the aircraft and the P will monitor all aircraft instruments.

REFERENCES:

Aircraft operator's manual
FM 1-203
TC 1-204

TASK 1042

TASK: Perform aircraft refueling.

CONDITIONS: Given a UH-1 helicopter.

STANDARDS:

1. Ensure that safety procedures are complied with per FM 10-68 and the aircraft operator's manual.

2. Ensure that the aircraft is at engine idle (when appropriate) and that the external lighting and radios are as specified in the unit SOP.

3. Ensure that all doors, windows, and vents are closed on the refueling side.

4. Refuel the aircraft per FM 10-68, the aircraft operator's manual, and the unit SOP.

5. Properly enter the appropriate information on DA Form 2408-13 (Aircraft Status Information Record).

6. Correctly perform crew coordination actions.

WARNING

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

DESCRIPTION:

1. Cold Refueling.

a. Guide the refueling vehicle to the aircraft, and ensure that the driver parks the vehicle the proper distance from the aircraft. Verify that all personnel not involved with the refueling operation are in the designated marshaling area.

b. Properly ground and refuel the aircraft per FM 10-68, the aircraft operator's manual, and the unit SOP. Ensure that the tanks are filled to the required level. When the refueling is completed, ensure that all caps are secured and remove the ground connection if the aircraft will not remain parked.

c. Inform the PC when the refueling is completed, and assist the passengers in boarding the aircraft and securing their seat belts. Assist the P* and P in clearing the aircraft during the departure from the refueling area. Make the appropriate entries on DA Form 2408-13.

2. Hot Refueling.

a. Assist the P* in positioning the aircraft to ensure that the proper separation is maintained between the fuel source, the aircraft, and the refueling equipment. Before refueling the aircraft, the PC will verify that all personnel not involved with the refueling operation are in the designated marshaling area.

b. Ensure that the aircraft is properly grounded, and refuel the aircraft per FM 10-68, the aircraft operator's manual, and the unit SOP; or assist with the refueling operation. Ensure that the tanks are filled to the required level. When refueling is completed, ensure that all caps are secured and remove the ground connection.

c. Inform the PC when the refueling is completed. Assist passengers in boarding the aircraft and in securing their seat belts. Assist the P* and P in clearing the aircraft during the departure from the refueling area. Make the appropriate entries on DA Form 2408-13.

NOTE: If open port hot refueling of the aircraft is to be accomplished, take added safety precautions. (These precautions should be included in the unit SOP.)

NIGHT OR NVG CONSIDERATIONS: At night, crew members will use an explosion-proof flashlight with an unfiltered lens to check for leaks and fuel venting and to back up aircraft lighting at the refueling station.

REFERENCES:

Aircraft operator's manual
AR 95-3
DA Pamphlet 738-751
FM 1-104
FM 1-500
FM 10-68
FM 21-60
Operator's and crewmember's checklist
TC 1-204
Unit SOP

TASK 1049

TASK: Perform postflight inspection.

CONDITIONS: In a UH-1 helicopter and given the aircraft operator's manual and checklist.

STANDARDS:

1. **Rated.**

a. Without error, perform the before-leaving helicopter tasks according to the aircraft checklist.

b. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Without omission, inspect the items listed in the before-leaving helicopter portion of the checklist.

b. Conduct a walk-around inspection of the helicopter with the PC/PI, ensuring that all areas are checked per the aircraft operators manual and the unit SOP.

c. Assist the PC/PI in completing the necessary logbook forms per DA Pamphlet 738-751 and the unit SOP.

d. Review the aircraft logbook, and ensure that all required maintenance is performed prior to the next flight.

e. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P*/P will accomplish the engine shutdown and before-leaving helicopter checks.

2. Following the checklist, the CE will conduct a walk-around inspection with the PC/PI. He will ensure that all fluid levels and pressures are serviced. The CE and/or PC/PI will inspect the aircraft for any damage that may have occurred during flight.

3. If required by the unit SOP, the CE will assist with refueling the aircraft. He will moor and service the aircraft per the aircraft operator’s manual and the unit SOP. The CE will assist the PC/PI in making any necessary entries on the logbook forms. The PC will ensure that any grounding conditions are

reported per the unit SOP. The CE also will ensure that required maintenance is performed prior to the next flight.

REFERENCES:

Aircraft operator's manual
AR 95-1
AR 385-95
DA Pamphlet 738-751
FM 10-68
Operator's and crewmember's checklist
Unit SOP

TASK 1050

TASK: Perform hovering autorotation.

CONDITIONS: In a UH-1 helicopter with an IP, in a locally approved touchdown area, and with the aircraft cleared.

STANDARDS:

1. Rated.

a. Prior to entry--

(1) Establish a stationary 3-foot hover, ±1 foot.

(2) Turn aircraft into the wind.

b. After entry--

(1) Maintain heading ±10 degrees.

(2) Maintain position over the ground within 1 foot.

(3) Execute a smooth, controlled descent and touchdown with no lateral or rearward drift.

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will, from a stationary 3-foot hover, retard the throttle to the engine idle stop. He will simultaneously apply the right pedal to maintain heading and adjust the cyclic to maintain position over the ground. (While retarding the throttle, he must not raise or lower the collective.) As the helicopter settles, he will apply sufficient collective to make a smooth descent and touchdown. He will not stop the descent by overapplying the collective and will be alert for lateral or rearward drift. When the helicopter is resting firmly on the ground, the p* will smoothly lower the collective to the fully down position while neutralizing the pedals and cyclic.

2. The P and CE will notify the P* of any drift.

NIGHT OR NVG CONSIDERATIONS:

1. At night, the crew must use proper scanning techniques to avoid spatial disorientation.

2. This training task is prohibited while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
FM 1-203

TASK 1052

TASK: Perform simulated engine failure at a hover.

CONDITIONS: In a UH-1 helicopter with an IP, in a locally approved touchdown area, and at hover altitude.

STANDARDS:

1. Rated.

a. Recognize the emergency, determine the appropriate corrective action, and from memory, perform all immediate action procedures described in the aircraft checklist.

b. Maintain heading ±10 degrees.

c. Do not allow lateral drift to exceed 1 foot during the descent.

d. Do not allow any rearward drift during the descent.

e. Execute a smooth, controlled descent and touchdown with no lateral or rearward drift.

f. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Upon detecting engine failure, the P* will maintain heading with the pedals and correct any lateral or rearward drift with the cyclic. If the IP initiates the maneuver while the aircraft is moving forward, the P* will adjust the cyclic to establish a landing attitude while avoiding an excessive tail-low condition. When the helicopter is resting firmly on the ground, the P* will lower the collective smoothly to the fully down position while neutralizing the pedals and cyclic.

2. The P will assist in clearing the aircraft as directed by the P*.

3. The CE will continually monitor the condition of the aircraft. He will clear the aircraft and perform any other crew tasks as directed.

NIGHT OR NVG CONSIDERATIONS: This training task is prohibited while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203
Operator's and crewmember's checklist

TASK 1053

TASK: Perform simulated engine failure at altitude.

CONDITIONS: In a UH-1 helicopter, with an IP, and above 400 feet AGL; or in a UH1FS.

STANDARDS:

1. **Rated.**

a. Recognize the emergency, determine the appropriate corrective action, and perform or simulate (as required) from memory all immediate action procedures described in the aircraft checklist.

b. Select a suitable landing area.

c. Correctly terminate maneuver as directed by the IP.

d. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The IP will announce "Simulated engine failure" and provide adequate warning for corrective action if engine operating limits may be exceeded. The IP will confirm the proper execution of immediate action steps.

2. Upon detecting engine failure, the P* will lower the collective to maintain rotor RPM within limits while adjusting the pedals to trim the aircraft. He will select a suitable landing area and, using turns and adjusting airspeed as necessary, maneuver the aircraft for a safe landing to the intended landing area. (The final approach should generally be into the wind.) The P* will call out the rotor RPM, gas producer, and aircraft in trim. He will direct the IP to simulate setting the emergency governor switch to EMER and the transponder to EMER and transmit a Mayday call on the GUARD frequency. The P* will complete or simulate the emergency procedures outlined in the aircraft checklist; if time permits, the IP will verify the procedures. The P* should plan each forced landing as if continuing to the ground.

3. Prior to reaching 400 feet AGL with the aircraft in a safe autorotative profile, the IP will state one of three commands: "power recovery," Terminate with power," or "Touchdown. (The emergency procedures training criteria outlined in AR 95-1 must be met before touchdown autorotations are performed.) The P* performs the following actions during these autorotations.

a. Power recovery. Upon receiving the command "Power recovery," immediately establish normal operating RPM by smoothly adjusting the throttle to the fully open position. Maintain the aircraft in trim with the pedals. After normal operating RPM has been regained, increase the collective to establish a normal climb prior to reaching 200 feet AGL.

b. Terminate with power. Upon receiving the command "Terminate with power," continue the autorotative descent. Prior to reaching 100 feet AGL, reestablish normal operating RPM, adjust the collective as necessary trim the aircraft with the pedals, and maintain the autorotation. At approximately 100 feet AGL, apply aft cyclic to initiate a smooth, progressive deceleration. Using the cyclic and pedals, align the aircraft. with the intended landing area. Adjust the collective, if required, to prevent excessive rotor RPM. At approximately 15 feet AGL, apply sufficient collective to control the rate of descent and ground speed. The rate of descent and ground speed should be zero at 3 to 5 feet AGL with the aircraft in a landing attitude.

c. Touchdown. Upon receiving the command "Touchdown," continue the autorotative descent. At approximately 100 feet AGL, apply aft cyclic to initiate a smooth, progressive deceleration. Maintain aircraft alignment with the touchdown area by properly adjusting the pedals and cyclic. Adjust the collective as necessary to prevent excessive rotor RPM. At approximately 15 feet AGL, apply sufficient collective to control the rate of descent and ground speed. (The amount of collective applied and the rate at which it is applied will depend on the rate of descent and ground speed.) Adjust the cyclic to attain a landing attitude, and apply collective as necessary just prior to touchdown to cushion the landing. After touchdown, maintain ground track alignment with the pedals. When the aircraft has come to a complete stop, lower the collective and neutralize the pedals and cyclic.

4. The CE will continually monitor the condition of the aircraft. He will clear the aircraft and perform other crew tasks as directed.

NOTE 1: When the task is conducted in the aircraft, the IP will initiate the maneuver by announcing "Simulated engine failure."

NOTE 2: The aircraft operator's manual contains details about the procedures outlined in the aircraft checklist.

NIGHT OR NVG CONSIDERATIONS: If performed in the aircraft, this training task is prohibited at night at other than designated areas or while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203
Operator's and crewmember's checklist
TC 1-204
Unit SOP

TASK 1056

TASK: Perform manual throttle operation, emergency governor mode.

CONDITIONS: In a UH-1 helicopter, with an IP, and with the aircraft cleared.

STANDARDS:

1. **Rated.**

a. Without error, perform the procedure to change the governor to the emergency mode according to the description below.

b. Maintain 6400 RPM, ±200 RPM.

c. Smoothly coordinate the throttle and collective controls.

d. Maintain altitude ±1 foot.

e. Maintain a constant rate of turn, not to exceed 90 degrees in four seconds.

f. Without error, change the governor to the automatic mode according to the procedure in the description.

g. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

CAUTION

To prevent engine overspeed, overtemperature, compressor stall, or failure, make smooth throttle and collective adjustments. Closely monitor the N1, N2, and EGT.

DESCRIPTION:

1. While the aircraft is on the ground with RPM stabilized at 6600 RPM and collective fully down, the P* will retard the throttle to engine idle. After noting a decrease in engine RPM, the P will move the governor switch to the emergency position. The P* will then smoothly adjust the throttle to 6400 RPM. He will bring the aircraft to a stabilized 3-foot hover by smoothly increasing the collective and adjusting the throttle to maintain 6400 RPM. The P* will apply cyclic and pedals as necessary to remain stationary and to maintain a constant heading. He will clear the aircraft and perform a left hovering turn and a right hovering turn. Upon completion of both turns, he will land the aircraft by smoothly reducing the collective and adjusting the throttle to maintain 6400 RPM. After landing, the P* will reduce the throttle to engine idle. After noting a decrease in engine RPM, the P will move the governor switch to the automatic position. The P* will slowly increase the throttle to the fully open position and adjust RPM to 6600. He will ensure that the fuel control is operating properly.

2. The P and CE will focus their attention primarily outside the aircraft to maintain airspace surveillance. They will inform the P* of all obstacles and will clear the aircraft verbally during the turns.

NOTE: In case of an actual in-flight emergency that requires emergency governor operations the crew will use the procedures outlined in the aircraft operator's manual.

NIGHT OR NVG CONSIDERATIONS: If conducted in the aircraft, this training task is prohibited while crew members are wearing NVG.

REFERENCES:

Aircraft operator’s manual
Operator’s and crewmember’s checklist

TASK 1065

TASK: Perform emergency egress.

CONDITIONS: In a UH-1 helicopter or orally in a classroom environment.

STANDARDS:

1. Properly demonstrate or explain the use of emergency exits on the aircraft.

2. Properly demonstrate or explain the emergency engine shutdown of the aircraft.

DESCRIPTION: Demonstrate or explain the use of the emergency exits. Demonstrate or explain how to identify and operate the engine throttle and fuel switch and how to turn the battery switch to OFF when an emergency engine shutdown is necessary.

REFERENCES:

Aircraft operator’s manual
Operator's and crewmember’s checklist
Unit SOP

TASK 1068

TASK: Perform or describe emergency procedures.

CONDITIONS: In a UH-1 helicopter or UH1FS, with an IP, IE, SI, FI, or NCT; or in a classroom environment; and given a specific emergency condition.

STANDARDS:

1. Without error, perform or describe appropriate emergency procedures according to the aircraft operator's manual.

2. While using NVG--

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

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

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will include in the crew briefing the general approach to all emergency procedures requiring immediate action. (This will lay the basic framework for crew reaction during an emergency.)

2. The P*, P, or CE will announce to the other crew members when he detects an emergency situation. The P* will remain focused outside the aircraft to maintain aircraft control and to provide clearance from traffic or obstacles. He will perform or direct the P to perform the underlined steps in the operator's and crewmember's checklist and will initiate the appropriate type of landing for the emergency.

3. The P will perform as directed or briefed. If time permits, he will verify all emergency checks with the checklist. He will request appropriate emergency assistance as described in the FIH.

4. The CE will perform or describe actions to be taken in preparing the aircraft, passengers, and cargo for an emergency landing. After landing, the CE will assist in evacuating the passengers in an orderly manner. If normal exits cannot be used, he will properly operate the nearest emergency exit to expedite their evacuation to the designated assembly area. He will keep communications to a minimum to allow the P* or P to attempt

communications outside the aircraft. After accounting for all crew members and passengers the CE will assist the other crew members in any follow-on action; for example, fighting fires, administering first aid, or using emergency signal or survival equipment.

5. Impending NVG failure is usually indicated by flickering or dimming in one or both tubes (AN/PVS-5) and/or illumination of the 30-minute low voltage warning indicator (AN\AVS-6). With an indication of NVG failure, the crew member will take the follow--ing steps as applicable:

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

(1) The crew member will immediately announce "Goggle failure."

(2) If the P* experiences NVG failure and is on approach, he will begin a climb at a rate that will ensure obstacle avoidance.

(3) If the P* experiences NVG failure, he will transfer the flight controls.

(4) The crew member experiencing NVG failure will turn the rotary switch to OFF, replace the battery, and turn the switch to ON.

(5) The crew member experiencing NVG failure will advise the crew of continued NVG failure or restored vision.

(6) If vision is not restored, crew members will remove the NVG and the PC must modify or abort the mission.

b. AN/PVS-5 or AN/AVS-6 (with dual-battery pack). The crew members will follow the procedures described in a(1) and (2) above. The P* will switch to the second battery and advise the other crew members of restored vision or of continued NVG fail-ure. If vision is not restored, the P* will transfer the flight controls, the crew members will remove the NVG, and the PC will abort or modify the mission.

NOTE 1: If at NOE altitudes, the P* should consider activating the landing light or immediately transferring the controls.

NOTE 2: NVG tube failure is infrequent and usually gives ample warning. Only occasionally will a tube fail completely in a short period of time; rarely will both tubes fail at the same time. No remedy exists for in-flight tube failure.

REFERENCES:

Aircraft operator's manual
FIH
FM 1-400
Operator's and crewmember's checklist
TC 1-204
TM 11-5855-238-10
TM 11-5855-263-10

TASK 1069

TASK: Identify or perform hand and arm signals.

CONDITIONS: Given a list of hand and arm signals from FM 21-60.

STANDARDS: From memory and without error, identify or perform the hand and arm signals.

DESCRIPTION: Identify or perform the hand and arm signals required to move an aircraft from one point to another. (The list should include the signals required for moving an aircraft left, right, forward, or rearward. It should also include the signals for takeoff, landing, and hookup and release of sling loads.)

REFERENCES:

FM 21-60
Unit SOP

TASK 1070

TASK: Obtain fuel sample.

CONDITIONS: Given a UH-1. helicopter and a fuel sample bottle.

STANDARDS:

1. Correctly obtain a fuel sample.
2. Correctly identify contaminated fuel.
3. Properly dispose of the fuel sample.

DESCRIPTION: Obtain a fuel sample prior to or during the pre-flight inspection of the aircraft and when directed by the PC. Take a sample from the four sumps in the belly of the aircraft, the fuel filter, and if installed, the range extension tanks. (Any water contaminants and foreign material in the fuel will settle to the bottom of the fuel sample bottle.) If necessary, obtain additional fuel samples to remove the materials from the fuel cell. When you have taken a "clean" sample, save it until the PC has checked it. Dispose of the fuel sample per the unit SOP.

REFERENCES:

Aircraft operator's manual
FM 10-68
Unit SOP

TASK 1071

TASK: Conduct passenger briefing.

CONDITIONS: Given the operator's and crewmember's checklist and information about the mission.

STANDARDS: without omissions, conduct the briefing as directed by the PC ushg the checklist.

DESCRIPTION: When directed by the PC, conduct applicable portions of the passenger briefing according to the checklist 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.

NOTE: The operator's manual contains details about the procedures outlined in the operator's and crewmember's checklist.

REFERENCES:

Aircraft operator's manual
FM 1-301
FM 1-302
FM 1-400
Joint Pub 3-50
Operator's and crewmember's checklist
TC 1-201
TC 1-204
Unit SOP

TASK 1075

TASK: Perform instrument takeoff.

CONDITIONS: In a UH-1 helicopter, in IMC or simulated IMC, or in a UH1FS and with the hover power and before-takeoff checks completed and the aircraft cleared.

STANDARDS:

1. **Rated.**

   a. Correctly set attitude indicator.

   b. Maintain required takeoff power, +3 to -0 psi torque.

   c. Maintain accelerative climb attitude ±1 bar width.

   d. Maintain takeoff heading ±10 degrees.

   e. Maintain the aircraft in trim after ETL.

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

   g. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft during the VMC portion of the maneuver. He will announce when he initiates the maneuver and his intent to abort or alter the takeoff. As the aircraft enters simulated or actual IMC, he will make the transition to the flight instruments.

2. The P will announce when ready for takeoff and will remain focused outside the aircraft to assist in clearing during the VMC portion of the maneuver and to provide adequate warning of obstacles. He will announce when his attention is focused inside the aircraft; for example, when monitoring and calling out torque. As the aircraft enters actual IMC, the P will monitor the flight instruments to assist in establishing coordinated flight within aircraft operating limits.

3. The CE will maintain airspace surveillance during the VMC portion of the maneuver. During simulated IMC only, the P and CE will focus their attention outside the aircraft to provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

4. The P* will perform the following actions:

a. From the around. Align the aircraft with the desired takeoff heading. Set the attitude indicator for takeoff (wings on the horizon). Smoothly increase the collective until the aircraft becomes "light on the skids." Using outside visual references, prevent aircraft movement. Check the controls for proper response. While referring to the flight instruments, smoothly increase the collective to obtain takeoff power (5 psi torque above hover power for training). As the collective is increased cross-check the attitude and heading indicators to ensure a proper attitude (wings on the horizon) and constant heading. When takeoff power is reached and the altimeter and vertical speed indicators show a positive climb, adjust pitch attitude one to two bar widths below the horizon for the initial acceleration. Maintain heading with the pedals prior to ETL. After ETL, make the transition to coordinated flight. When approaching climb airspeed, adjust controls as required to maintain the desired climb airspeed.

b. From a hover. On the runway or takeoff pad, align the aircraft with the desired takeoff heading. Set the attitude indicator for takeoff (wings on the horizon). Establish the aircraft at a 3-foot hover, and check the controls for proper response. Initiate the takeoff by smoothly and steadily increasing the collective until takeoff power is reached (5 psi torque above hover power for training). Then adjust the pitch attitude one to two bar widths below the horizon to establish the initial accelerative climb attitude. Visually maintain runway clearance and alignment on takeoff until the aircraft accelerates through ETL. At that time, direct your attention to the flight instruments and establish an instrument cross-check.

NOTE: Hover OGE power is required for this task.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203
FM 1-240
Operator's and crewmember's checklist
TC 1-204

TASK 1076

TASK: Perform radio navigation.

CONDITIONS: In a UH-1 helicopter in IMC or simulated IMC or in a UH1FS 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 aircraft position.
   - **e.** Correctly intercept and maintain the desired course.
   - **f.** Correctly identify station passage.
   - **g.** Correctly perform crew coordination actions.
2. **Nonrated.**
   - **a.** If in VMC, properly maintain airspace surveillance.
   - **b.** Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will select and announce radio frequencies. He also will monitor radios and ATC information not monitored by the P*.

2. The PC will ensure that all radio navigational equipment to be used during the mission is operable. He will also ensure that the equipment is within accuracy tolerances, if applicable, as specified in FM 1-240 and the aircraft operator's manual.

3. Prior to using a selected radio for navigation, the P will tune and identify the desired station and determine the position of the aircraft in relation to the desired course. The P* will turn 45 degrees toward the course (90 degrees to expedite). He will maintain an intercept heading until approaching an on-course indication. Depending on the rate of closure, the P* will start a turn so as to intercept the desired track on course.

4. The P* will announce ATC information not monitored by the P and will maintain the desired heading until navigational instruments show an off-course condition. He will then turn 20 degrees toward the course to reintercept. If navigational instruments do not indicate movement toward the course within a reasonable time, the P* will increase the intercept angle. When he reintercepts the course, he will turn toward the course and apply the appropriate drift correction (normally one-half of the intercept angle). The P* will continue to bracket the course by decreasing corrections until he obtains a heading that will maintain the aircraft on course. Crew members will determine arrival at radio intersections per procedures in FM 1-240. They will identify station passage by observing the first complete reversal of the indicator needle and/or the TO-FROM indicator.

5. The P* will announce any deviation not directed by ATC or the P and will acknowledge all directives given by ATC or the P.

6. During simulated IMC only, the P and CE will focus their attention outside the aircraft to provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

REFERENCES:

AIM
Aircraft operator's manual
AR 95-1
DOD FLIP
FM 1-240

TASK 1077

TASK: Perform holding procedures.

CONDITIONS: In a UH-1 helicopter in IMC or simulated IMC or in a UH1FS and given an altitude, holding instructions, and appropriate navigational publications.

STANDARDS:

1. **Rated.**

   a. Maintain altitude ±100 feet.

   b. Maintain airspeed ±10 KIAS.

   c. Correctly tune and identify the appropriate NAVAIDs.

   d. Correctly enter the holding pattern.

   e. Correctly time and track holding pattern legs.

   f. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. If in VMC, properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Prior to arrival at the holding fix, the P will analyze the holding instructions and determine the holding pattern and proper entry procedures. He will brief the P* on the proposed entry, outbound headhg, and inbound course.

2. Upon arrival at the holding fix, the P* will turn (if required) to the predetermined outbound heading and check the inbound course. He will maintain the outbound heading per the DOD FLIP or as directed by ATC. After the appropriate time outbound, he will turn to the inbound heading and apply normal tracking procedures to maintain the inbound course. The P will note the time required to fly the inbound leg.

3. The P will select radio frequencies and monitor radios. He will announce ATC information not monitored by the P*. He also will compute outbound times and headings to adjust for winds and direct the P* to adjust the pattern as necessary.

4. The P* will fly headings and altitudes and will adjust inbound and outbound times as directed by ATC or the P. He will announce any deviation as well as ATC information not monitored by the P.

5. During simulated IMC only, the P and CE will remain focused outside the aircraft to provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

REFERENCES:

AIM
DOD FLIP
FM 1-240

TASK 1078

TASK: Perform unusual attitude recovery.

CONDITIONS: In a UH-1 helicopter with a UT, an IP, or an IE and in simulated IMC; or in a UH1FS.

STANDARDS:

1. Rated.

a. Correctly analyze aircraft attitude.

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

c. Recover without exceeding aircraft operating limitations and with a minimum loss of altitude.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The IP, UT, or IE will direct unusual attitude recovery and positively transfer aircraft controls. He will announce any input to or when assuming aircraft controls.

2. The P* will acknowledge the unusual attitude recovery and positive transfer of aircraft controls. He will immediately initiate a recovery to straight and level flight by--

a. Establishing a level pitch and roll attitude.

b. Establishing and maintaining a heading.

c. Adjusting to a cruise or climb power setting.

d. Trimming the aircraft.

3. During simulated IMC only, the P and CE will focus their attention outside the aircraft to provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

REFERENCES:

AR 95-1
FM 1-240

TASK 1079

TASK: Perform radio communication procedures.

CONDITIONS: In a UH-1 helicopter or a UH1FS 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 AIM and 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. Correctly use the intercommunication system to communicate with the crew.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. During the crew briefing, the PC will assign radio responsibilities. He will indicate whether the P* or P will establish and maintain primary communications.

2. The P* will announce ATC information not monitored by the P.

3. The P will adjust avionics to required frequencies. He will copy pertinent information and announce information not monitored by the P*.

4. The CE will use standard terms and phraseology for all intercommunications. During normal operations, he will monitor external communications but will not interrupt when external communications are being transmitted or received. During external load operations and engine-start, run-up, and shutdown procedures, he will monitor external communications only when directed by the PC.

5. The crew member assigned responsibility for communication procedures will perform the following actions: Adjust avionics to the required frequencies. Continuously monitor the avionics. When required, establish communications with the appropriate ATC facility. Monitor the frequency before transmitting. Transmit pilot reports, position reports, and flight plan changes. Use the correct radio call sign when acknowledging each communication. When advised to change frequencies, acknowledge the instructions. 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 as appropriate for the area of operations.

REFERENCES:

AIM
DOD FLIP
Unit SOP

TASK 1080

TASK: Perform or describe procedures for two-way radio failure.

CONDITIONS: In a UH-1 helicopter, a UH1FS, or a classroom environment.

STANDARDS:

1. Implement or describe correct procedures for two-way radio failure.

2. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* or P will announce two-way radio failure. The PC will direct the efforts to identify and correct the avionic malfunctions.

2. The P* will focus his attention outside the aircraft or inside the cockpit on the instruments, as appropriate. He will not participate in troubleshooting the malfunction.

3. The P will attempt to identify the malfunction and announce the results.

4. If two-way radio failure occurs while operating under VFR or if VMC are encountered after the failure, the crew will continue the flight under VFR and land as soon as practicable.

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

6. If two-way radio failure occurs while operating under IFR outside CONUS, the crew will comply with ICAO rules or applicable

REFERENCES:

DOD FLIP

FIH

Unit SOP

TASK 1081

TASK: Perform nonprecision approach.

CONDITIONS: In a UH-1 helicopter under IMC or simulated IMC or in a UH1FS, with the approach clearance received and the before-landing check completed, and given the appropriate DOD FLIP.

STANDARDS:

1. **Rated.**

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

b. Maintain airspeed ±10 KIAS.

c. Maintain altitude ±100 feet.

d. Maintain NDB courses ±5 degrees.

e. Maintain VOR courses within a one-half scale deflection using the CDI or ±5 degrees when using the RMI.

f. Maintain LOC courses within a full-scale deflection on the CDI.

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

h. Comply with descent minimums prescribed for the approach.

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

j. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will review the approach with the other crew members prior to initiating the procedure.

2. The P* will remain focused inside the aircraft on the instruments and follow the heading, altitude, and missed approach directives issued by the P. He will announce any deviation not directed by ATC or the P and will acknowledge all navigation directives given by the P.

3. The P will call out the approach procedure to the P*. He will announce changes to ATC communication frequencies and ATC information not monitored by the P*. The P will announce VMC or the landing environment and may assume the aircraft controls to complete the approach.

4. During simulated IMC only, the P and CE will focus their attention outside the aircraft to provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

NOTE: FM 1-240 and the AIM describe approach procedures.

REFERENCES:

AIM
Aircraft operator's manual
AR 95-1
DOD FLIP
FM 1-240

TASK 1082

TASK: Perform precision approach.

CONDITIONS: In a UH-1 helicopter under IMC or simulated IMC or in a UH1FS, with radio contact established with the controller and the before-landing check completed, and given the appropriate DOD FLIP.

STANDARDS:

2. Rated.

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

b. Maintain the prescribed standards as follows:

(1) For an ILS approach, remain within a full-scale deflection of the CDI; for a final approach, maintain the glide slope indicator within a full-scale deflection.

(2) For a PAR approach, maintain headings as directed by ATC; for a final approach, maintain headings and glide slope as directed by ATC.

c. Maintain airspeed ±10 KIAS.

d. Maintain altitude ±100 feet.

e. Maintain heading ±5 degrees.

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

g. Comply with the DHs prescribed for the approach.

h. Execute the correct missed approach procedure upon reaching the DH if landing cannot be accomplished.

i. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will review the approach with the other crew members prior to initiating the procedure.

2. The P* will remain focused inside the aircraft on the instruments and follow the heading, altitude, and missed approach directives issued by ATC or the P. The P* will announce any deviation not directed by ATC or the P and will acknowledge all navigation directives given by the P.

3. The P will call out the approach procedure to the P*. He will announce changes to ATC communication frequencies and ATC information not monitored by the P*. The P will announce VMC or the landing environment and may assume the aircraft controls to complete the approach.

4. During simulated IMC only, the P and CE will focus their attention outside the aircraft to provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

NOTE: FM 1-240 and the AIM describe approach procedures.

REFERENCES:

AIM
Aircraft operator's manual
AR 95-1
DOD FLIP
FM 1-240

TASK 1083

TASK: Perform or describe inadvertent IMC procedures/VHIRP.

CONDITIONS: In a UH-1 helicopter under simulated IMC, in a UH1FS, or orally in a classroom environment.

STANDARDS:

1. **Rated.**

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

b. Immediately initiate a climb.

c. Without error (if applicable), comply with local vertical helicopter instrument recovery procedures.

d. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* and/or the P will announce inadvertent IMC.

2. The P* will announce when he initiates inadvertent IMC procedures or VHIRP.

3. The P will monitor the cockpit instruments to assist in establishing coordinated flight within aircraft operating limits. He also will make the appropriate radio calls.

4. The CE will focus his attention outside the aircraft to provide adequate warning of terrain or obstacles. The P and CE will perform any other crew tasks as directed by the PC.

5. If inadvertent IMC are encountered, the P* will proceed as follows:

a. Level the wings on the attitude indicator.

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

c. Adjust the torque to climb power.

d. Adjust the airspeed to climb airspeed.

e. Complete the inadvertent IMC recovery/VHIRP per local regulations and policies.

NIGHT OR NVG CONSIDERATIONS:

1. When using NVG, the crew may be able to see through thin obscurations, such as fog and drizzle, with little or no degradation. The NVG may be removed or flipped up once cruise flight is established.

2. If IMC are entered with the pink light or landing light on, spatial disorientation may occur.

REFERENCES:

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

TASK 1095

TASK: Operate aircraft survivability equipment.

CONDITIONS: In a UH-1 helicopter equipped with ASE and during a tactical flight in a simulated threat environment or in a classroom environment.

STANDARDS:

1. **Rated.**

   a. Correctly prepare equipment for operation.

   b. Without error, perform self-test check, if required.

   c. Identify the threat or friendly radar system from the visual display or audio warning without delay.

   d. Properly operate the equipment.

   e. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Correctly prepare the equipment for operation.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew will perform a preflight inspection and will perform or simulate employment procedures and precautions for the installed equipment; for example, AN\APR-39(V)1/2.

2. The PC will direct or perform turn-on, self-test, and operational checks; operating procedures; and shutdown procedures. He will evaluate and interpret the ASE visual and aural indications.

3. The crew will properly execute mission employment doctrine and determine partial failure alternatives.

REFERENCES:

Aircraft operator's manual
ASET Programs
FM 1-101
TM 11-5841-283-12
TM 11-5841-291-12
TM 11-5865-200-12
TM 11-5865-201-1.2
TM 11-5865-202-12
TM 11-5865-229-12

TASK 1099

TASK: Operate Mark XII IFF System.

CONDITIONS: In a UH-1 helicopter or a UH1FS equipped with the Mark XII IFF System and given a mission briefing that includes signal operation instructions.

STANDARDS:

1. Correctly prepare the system for operation.

2. Correctly perform a self-test check.

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

4. Correctly operate the equipment without assistance.

DESCRIPTION: Perform or simulate the operational and employment procedures and precautions for the Mark XII IFF System. These include the 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 1: TM 11-5895-1199-12 contains details on the Mark XII IFF System.

NOTE 2: The PC will perform, or brief the P to perform, the operational checks and procedures for the Mark XII IFF System.

NOTE 3: Crew members may simulate placing the equipment in operation, performing self-tests, and classifying defects. The equipment may not be serviceable or mission constraints may not allow the equipment to be placed into operation.

REFERENCES:

Aircraft operator's manual
DOD AIM 86-100
TM 11-5895-1199-12

TASK 1120

TASK: Load, secure, and unload litter and ambulatory patients.

CONDITIONS: In a MEDEVAC-configured helicopter, with a crew and patients, and given the appropriate number of litters.

STANDARDS:

1. Properly prepare the aircraft for loading patients.

2. Correctly determine the patients' loading category.

3. Properly brief litter teams on approaching and loading patients and brief passengers.

4. Properly secure patients to litters and litters to supports or stanchion poles, as appropriate.

5. Properly secure medical equipment and patients' baggage.

6. Ensure that personnel do not approach the tail rotor area.

7. Ensure that assisting personnel are clear of the aircraft before takeoff.

8. Properly maintain airspace surveillance.

9. Correctly perform crew coordination actions.

10. Properly unload patients at destination.

DESCRIPTION:

1. Prepare the aircraft for loading patients per FM 8-10-6, Chapter 10.

2. Load litter and ambulatory patients per FM 8-10-6, Chapter 10.

3. Secure litter and ambulatory patients per FM 8-10-6, Chapter 10.

4. Ensure the safety of personnel by not allowing them to approach the tail rotor area. Also make sure assisting personnel are clear of the aircraft before takeoff.

5. Inform the PC when ready for takeoff.

6. At the destination, unload the patients per FM 8-10-6, Chapter 10.

REFERENCES:

Aircraft operator's manual
FM 8-10-6

TASK 1121

TASK: Perform cardiopulmonary resuscitation.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient (actual or simulated) in cardiac arrest.

STANDARDS:

1. Properly restore spontaneous respirations and/or cardiac action using the available equipment and personnel.

2. Keep the PC informed of the patient's status.

DESCRIPTION:

1. Establish unresponsiveness by painful stimuli.

2. Observe cardiac rhythm while palpating for carotic pulse.

3. Notify the PC to inform the receiving hospital that the patient is in cardiac arrest.

4. Place the cardiac board under the patient's head and shoulders.

5. Position one rescuer at the patient's side to provide compressions. Position the second rescuer behind the patient's head.

NOTE: Rib fractures and flail chest injuries are not contra-indications of CPR.

6. Begin manual resuscitation, using the following procedures:

a. Place the mask over the nose and mouth. Maintain hyperextension while obtaining a firm seal. Deliver 4 rapid ventilations by BVMR or IPPV. If needed, insert an artificial airway (EOA or oropharyngeal) at this time.

NOTE: The sternum on the average adult should be depressed 1 1/2 to 2 inches during CPR.

b. Begin cardiac compressions at a ratio of 5 compressions for every 1 ventilation to obtain a rate of 60 compressions and 12 ventilations per minute.

c. After one minute of CPR, stop and check the pulse. If a pulse is not present, give 2 rapid ventilations and continue CPR.

d. Continue to check the pulse every few minutes.

e. Do not stop CPR for more than five seconds, not even to check pulse.

7. Do not attempt advanced cardiac life support before initiating basic cardiac life support.

REFERENCES:

FM 8-230
STP 8-91B25-SM-TG
Unit SOP

TASK 1122

TASK: Monitor vital signs in flight.

CONDITIONS: In a MEDEVAC-configured helicopter while in flight and given a patient (actual or simulated) and a sphygmomanometer (cuff).

STANDARDS:

1. Correctly obtain an accurate blood pressure reading.

2. Accurately monitor pulse and respiration rates.

DESCRIPTION:

1. Explain the procedure to the patient clearly and simply.

2. Place the cuff around the patient's arm.

3. Palpate the radial pulse continuously.

4. Inflate the cuff 30 millimeters of mercury beyond the reading of the pulse cessation.

5. Deflate the cuff slowly (2 to 3 millimeters of mercury per second) to ensure accuracy.

6. Read the sphygmomanometer when the first radial pulse beat is felt to determine the systolic blood pressure.

7. Deflate the cuff rapidly.

8. Take the patient’s pulse and respiration rates.

REFERENCE:

FM 8-230

TASK 1123

TASK: Perform medical sorting (triage).

CONDITIONS: In a MEDEVAC-configured helicopter, in an emergency situation (actual or simulated), and given several patients.

STANDARDS:

1. Correctly classify the patients immediately according to the type and seriousness of the injury and the likelihood of survival.

2. Correctly establish priorities for the treatment and evacuation of the patients to ensure the best medical care possible.

DESCRIPTION:

1. Identify the patients requiring minimal treatment.

NOTE: This group includes the ambulatory patients and those who can be returned to duty immediately. They may be treated, under supervision, by lesser-skilled or other professional personnel. Examples of their injuries include minor lacerations, contusions, sprains, strains, minor fractures, burns over less than 20 percent of the body surface area, and minor combat stress reactions.

2. Identify the patients requiring immediate treatment.

NOTE: This group includes patients for whom conditions demand immediate treatment to save life or limb. Examples of their injuries include airway Obstruction respiratory failure, and cardiopulmonary failure resulting from otherwise treatable injuries (for example, electrical shock or chemical exposure). Other examples include massive external bleeding, shock, and burns on the face, neck, hands, feet, or perineum and genetalia.

3. Identify patients requiring delayed treatment.

NOTE: This group includes those patients who have less risk of loss of life or limb if treatment is delayed. Examples of their injuries include open chest wounds without respiratory distress, open or penetrating abdominal wounds without shock, and other open wounds and fractures. Other examples include severe eye injuries, damaged blood vessels in the extremities causing poor or no blood supply, and second-degree and third-degree burns covering 20 percent or more of the total body surface area.

4. Identify patients requiring expectant treatment.

NOTE: This group includes those patients so critically injured that only complicated and prolonged treatment can improve life expectancy, especially if resources are limited. If in doubt, place the patient in one of the other categories. Examples of their injuries are massive head injury with sign of impending death and mostly third-degree burns covering over 85 percent of the total body surface area.

REFERENCE:

STP 8-91B25-SM-TG

TASK 1124

TASK: Identify and treat adverse effects of altitude on a patient with chest and head injuries.

CONDITIONS: In a MEDEVAC-configured helicopter, with oxygen administration equipment and standard medical equipment on board, and given a patient (actual or simulated) having head, chest, or lung injuries. An actual patient exhibits signs of the adverse effects of altitude, or a simulated patient is treated according to a list of signs provided.

STANDARDS:

1. Correctly identify the adverse effects of altitude on patients with chest and head injuries by observing the patient or by identifying the effects from a list of multiple physical and mental signs.

2. Properly initiate the appropriate medical treatment.

3. Relay the need for low-level flight to the pilots.

DESCRIPTION:

1. Identify the adverse effects of altitude on patients with chest or lung injuries. (The patient may exhibit breathing difficulty, rapid respirations, cyanosis, and restlessness.)

2. Treat the patient by administering oxygen and positioning the patient in a sitting position if not otherwise contraindicated. Check the chest tubes, if in place, to ensure that the Heimlich valves are functioning.

3. Identify the adverse effects of altitude on the patient with head injuries. (The patient may show evidence of increased drainage of cerebrospinal fluid into dressings or from the ears or nose. He also may exhibit changes in the level of consciousness from hyperactivity to coma, in respiration and pulse rates, or in the pupillary reaction to light.)

4. Treat the patient by keeping him as quiet as possible and administering oxygen if the pulse rate is slow or if cyanosis is evident.

5. Provide artificial ventilation and CPR as needed. Maintain an open airway by inserting an oral nasal airway or by repositioning one already inserted.

6. Notify the PC of the need for low-level flight as soon as the patient shows signs of an adverse reaction to the present altitude.

REFERENCES:

FM 8-230
FM 8-273-1
FM 8-273-2
TB MED 289

TASK 1125

TASK: Administer oxygen therapy by nasal catheter.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient, an appropriate plastic nasal cannula with tubing, and a regulator for the oxygen cylinder.

STANDARDS: Properly administer oxygen therapy according to the description and references below.

DESCRIPTION:

1. Check for contraindications, and plan the specific treatment.

2. Explain to the patient the purpose and method of administering oxygen. If the patient is coherent, have him reiterate the explanation to ensure that he understands.

3. Check for the patency of the patient's nasal passageways. (Ineffective oxygen consumption can be caused by obstructed nasal passageways, even with the appropriate oxygen flow.)

4. Attach the oxygen supply tubing, and turn the oxygen flow to the desired rate as indicated by the gauge. Test to see that oxygen is flowing through the cannula by directing the flow onto your hand.

5. Place the nasal cannula in the patient's nasal passageways, and adjust the head strap as needed.

REFERENCES:

FM 8-14
FM 8-230

TASK 1126

TASK: Administer oxygen by mask.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient with an oxygen deficiency, an appropriate oxygen mask and tubing, and a flowmeter for 50 psi of oxygen.

STANDARDS: Properly administer oxygen according to the description and references below.

DESCRIPTION:

1. Check for contraindications, and plan the specific treatment.

2. Attach the regulator to the oxygen tank.

3. Attach the oxygen mask tubing to the regulator outlet, and adjust the flow by turning the needle valve on the pressure-compensator flowmeter to an adequate liter flow. (The liter flow must be great enough to meet the patient's needs.)

4. Place an oxygen mask on the patient, starting from the nose downward. Adjust the shape of the mask to the patient's facial configuration, and adjust the head strap for proper fit.

REFERENCES:

FM 8-14
FM 8-230

TASK 1127

TASK: Initiate an intravenous infusion.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient, an infusion set, an IV solution, and tape.

STANDARDS: Correctly establish a patient infusion without causing undue trauma to the patient's vascular system, using the aseptic technique in the description and reference below.

DESCRIPTION:

1. Assemble the equipment.

2. Prepare the patient for the IV infusion by explaining what is to be done and reassuring him.

3. Place the patient in as comfortable a position as possible, preferably supine, with either arm accessible for a choice venipuncture site.

4. Cut adhesive strips about 4 inches long and 1/2 inch wide.

5. Remove the tubing from the carton and plastic envelope just before venipuncture.

6. Prepare the solution container by following the manufacturer’s instructions on the solution container.

7. Prepare the infusion set by following the manufacturer’s instructions on the carton container.

8. Invert the solution container, and suspend it about 2 feet above the level of the patient.

9. Expel the air from the tubing, holding the needle over the emesis basin.

10. Perform the venipuncture as follows:

a. Select the site.

b. Prepare the site.

c. Apply a constricting band.

d. Prepare to puncture the vein.

e. Puncture the vein.

f. Confirm the puncture.

g. Advance the needle or catheter.

h. Connect the tubing.

i. Release the constricting band.

j. Adjust the flow rate to keep the flow open.

k. Check for infiltration.

1. Secure the site.

m. Readjust the flow to the desired flow rate.

n. Recheck for infiltration.

o. Record the procedure, as appropriate.

11. Secure the needle to the skin by using three strips of prepared tape; place two strips crossed over the hub of the needle and one about 6 inches distal to the hub. Loop the tubing to avoid tension.

CAUTION

If, prior to IV infusion, the patient's arm must be splinted to reduce movement, secure the board above the elbow and below the wrist with gauze ties. Do not tie the bandage so tightly that it interferes with circulation.

12. Record the following IV infusion information, if appropriate:

a. Time started.

b. By whom started.

c. Site of infusion.

d. Type and amount of fluid.

e. Rate of flow.

CAUTION

Watch for any signs of reactions. Take the patient's pulse frequently. Watch the patient's color. Clamp the tubing, and report immediately if the patient complains of feeling chilly or if he is shivering.

REFERENCE:

STP 8-91B25-SM-TG

TASK 1128

TASK: Administer manual ventilation by bag-mask.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient in acute respiratory distress with an oxygen deficiency, an AMBU bag, and an oxygen source (optional) .

STANDARDS: Relieve the patient's respiratory distress by properly administering manual ventilation with an AMBU bag according to the description and reference below.

DESCRIPTION:

1. Check the AMBU bag valves to be sure they open and close properly by compressing the reservoir bag.

2. If oxygen is to be administered, attach the oxygen tubing from the oxygen source to the AMBU bag below the one-way valve.

3. Apply the AMBU bag to the patient. If the patient has an artificial airway, remove the mask and apply the bag directly to the airway. If the mask is used, hyperextend the patient's neck.

4. Ventilate the patient by compressing the reservoir bag, watching for the patient's chest to rise.

5. Use a normal inspiratory-expiratory ratio of 1:1.5. Use a normal respiration rate. Deliver a normal tidal volume to the patient.

6. Continue ventilating the patient manually until--

a. The patient resumes normal respiration.

b. The patient is put on mechanical ventilation.

c. The physician orders the ventilation stopped.

REFERENCE:

FM 8-230

TASK 1129

TASK: Perform a preflight inspection of medical equipment.

CONDITIONS: In a MEDEVAC-configured helicopter as first-up standby aircraft and given the medical equipment checklist aircraft checklist and manufacturer's instructions.

STANDARDS: Properly perform a preflight inspection of all applicable medical equipment using the appropriate checklist or instructions.

DESCRIPTION:

NOTE: Refer to the related checklist or manufacturer's instructions for the preflight inspection below.

1. Visually check the appropriate equipment for serviceability cleanliness, and accountability.

2. Test the charge and load (defibrillator) of the appropriate equipment.

3. Make the communications checks.

REFERENCES:

Aircraft checklist
Manufacturer's instructions
Medical equipment checklist
Unit SOP

TASK 2004

TASK: Perform pinnacle or ridgeline operation.

CONDITIONS: In a UH-1 helicopter with the before-landing check completed.

STANDARDS:

1. Rated.

a. Reconnaissance.

(1) Establish desired altitude ±100 feet.

(2) Establish desired airspeed ±10 KIAS.

(3) Properly perform a continuous reconnaissance.

b. Approach.

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

(2) Maintain a constant approach angle.

(3) Maintain an appropriate rate of closure.

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

c. Takeoff.

(1) Perform a hover power check, if required, and complete a before-takeoff check without error.

(2) Properly clear the aircraft.

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

(4) Maintain appropriate airspeed ±10 KIAS.

d. Crew coordination. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Ensure all passengers and cargo are secure prior to final approach.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will select a flight path, an airspeed, and an altitude that allows him to observe the landing area. When practical, he will position the aircraft on the windward side of the pinnacle or ridgeline. The P* will remain focused outside the aircraft to evaluate the suitability of the area and the effects of the wind and to clear the aircraft throughout the approach and landing. He will select a touchdown point in the forward, usable one-third of the landing area and announce whether he will terminate the approach to a hover or to the ground. The P* also will announce any deviation from the approach and a tentative flight path for the departure. The approach angle can vary from a shallow to a steep angle, depending on the wind, density altitude, gross weight, and availability of forced landing areas. The crew will continue the reconnaissance on the final approach to confirm information previously gained. The rate of closure on the final approach may be difficult to determine because of motion parallax, until the aircraft is close to the landing point. The P* will reduce airspeed to slightly above ETL until the rate of closure can be determined. He will then adjust the rate of closure not faster than a brisk walk. He will execute a go-around if the reconnaissance reveals that a safe landing cannot be accomplished.

2. The P and CE will confirm the suitability of the area, assist in clearing the aircraft, and provide adequate warning of traffic or obstacles. The P will acknowledge any intent to deviate from the approach. The P and CE will announce when their attention is focused inside the aircraft.

3. After touchdown, the P* will check aircraft stability as he lowers the collective and, if aircraft movement is detected, will reposition the aircraft. The crew will perform a ground reconnaissance and clear the aircraft. The P will perform the before-takeoff check and verify a hover power check if required. The crew will clear the aircraft prior to and during takeoff.

4. The P* will focus his attention outside the aircraft during the takeoff maneuver. He will announce his intent to take off and the direction of takeoff. The P* will then execute an airspeed-over-altitude takeoff and announce his intent to abort or alter the takeoff if required. If the takeoff requires clearing obstacles the P* will use power as necessary to clear

the obstacles while maintaining a constant climb angle and ground track . After clearing the obstacles, he will adjust the aircraft's pitch attitude to gain forward airspeed.

5. The P and CE will acknowledge when ready for takeoff and remain focused outside the aircraft to assist in clearing and to provide adequate warning of obstacles. They will announce when their attention is focused inside the aircraft; for example, when monitoring cockpit instruments, performing map navigation, or verifying the security of passengers or equipment.

6. The CE will perform the following actions:

a. During the approach, assist the aviator in conducting a low reconnaissance of the landing area to determine its suitability. Advise the P* when the aircraft is clear of obstacles. If requested by the P*, call out the altitude down to 25 feet in 25-foot increments beginning at 100 feet AGL. Then call out altitude from 25 feet to 10 feet in 5-foot increments and from 10 feet to touchdown of the landing gear in 1-foot increments.

b. After the aircraft is stabilized on the ground, conduct a ground reconnaissance as directed by the PC. Note obstacles, and evaluate the suitability of the pinnacle or ridgeline for future operations.

c. If requested by the P*, call out the landing gear height up to 10 feet in 1-foot increments during the takeoff. Then call out the landing gear height to 25 feet in 5-foot increments and to 100 feet in 25-foot increments. Advise the aviator when the aircraft is clear of obstacles.

NOTE 1: If two nonrated crew members are assigned to the flight, the crew member not engaged in calling out the aircraft height should keep the P* informed of obstacles to the rear.

NOTE 2: 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. Crews should treat visual obstacles the same as physical obstacles.

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

REFERENCES:

Aircraft operator's manual
FM 1-202
FM 1-203
Operator’s and crewmember's checklist
Unit SOP

TASK 2005

TASK: Perform FM radio homing.

CONDITIONS: In a UH-1 helicopter with appropriate frequencies.

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 maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will establish radio contact with the homing station and specify definite transmission and pause periods. He will set the mode selector switch on the FM control panel to HOME.

2. The P* will fly the aircraft to the station by heading in a direction that will cause the course deviation pointer in the VSI to center. He will solve ambiguity by changing the heading when the pointer centers and by checking that the pointer drifts in the opposite direction. While homing to the station, the P* will change heading slightly (10 to 15 degrees) during the transmissions and observe that the vertical pointer continues to deflect in the opposite direction. If the pointer shows a turn in the same direction, it indicates that the aircraft has passed the station. The P* will continue the turn and attempt to identify the station visually or verify the position.

3. The P and CE will assist in clearing the aircraft and provide adequate warning of traffic or obstacles. They will announce when their attention is focused inside the aircraft.

NOTE: FM homing is possible only when using VHF-FM 1.

REFERENCES:

Aircraft operator's manual
FM 1-203
FM 1-240

TASK 2007

TASK: Perform aerial observation.

CONDITIONS: In a UH-l helicopter or orally in a classroom environment.

STANDARDS:

1. **Rated.**

   a. Use correct visual search techniques.

   b. Accurately locate the position of the target.

   c. Accurately identify the target.

   d. Without error, make appropriate spot reports.

   e. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will complete a thorough crew and mission briefing.

2. The P* will focus his attention primarily outside the aircraft and respond to navigation instructions or cues given by the P. He will acknowledge commands issued by the P for the heading and airspeed changes necessary to navigate the desired course(s) . The P* will also announce significant terrain features to the P to assist in navigation.

3. The P will be responsible for navigation to the desired area and all aerial observation except for the stationary technique.

4. The P and CE will assist in clearing the aircraft and provide adequate warning of traffic or obstacles. They also will announce when their attention is focused inside the aircraft.

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

a. Detection. Detection requires determination 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.

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.)

6. Visual search is the systematic visual coverage of a given area so that all parts of the area are observed. The purpose of visual search is to detect objects or activities 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 with less detail. Lower altitudes are usually used because they increase survivability.

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 to camouflage will 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 enemy is skillful in the art of camouflage. The aircrew must be aware that obvious sightings may be intentional because of high concentrations of antiaircraft weapons.

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

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 generally 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.

(1) The nonobservation sector is the area where the aircrew's field of vision is restricted by the physical configuration of the aircraft.

(2) The observation work sector is that portion of the field of vision to which search activity is confined. The observation work sector is subdivided into two smaller sectors: the acquisition sector and the recognition sector.

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

(b) The recognition sector is the remainder of the observation work sector.

c. Stationary technique. This technique is used at NOE altitudes with the aircraft hovering in a concealed position. When using the stationary technique, the crew makes a quick overall search for sightings unnatural colors, outlines, or movements. The P* starts scanning from the 12 o'clock position through 90 degrees on his side of the aircraft, searching an area approximately 50 meters in depth. This scan continues outward from the aircraft, increasing the depth of the search area by overlapping 50-meter intervals until the entire search area has been covered. The P will duplicate the same technique on his side of the aircraft. The CE and other crew members, if assigned, will perform as directed by the PC.

REFERENCES:

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

TASK 2008

TASK: Perform evasive maneuvers.

CONDITIONS: In a UH-1 helicopter, in a simulated tactical environment; or orally in a classroom environment.

STANDARDS:

1. Rated.

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

b. Correctly perform crew coordination actions.

***2*. Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. When engaged by the enemy, the crew will announce the nature of the threat (hostile fire or radar detection) and the direction of the threat.

2. The P* will announce the direction of flight to deploy to cover and remain focused outside the aircraft during the evasive maneuver and clearing.

3. The P and CE will remain focused outside the aircraft and attempt to maintain visual contact with the threat. They will give adequate warning to avoid obstacles detected during the evasive maneuver. They also will announce when their attention is focused inside the aircraft; for example, when monitoring cockpit instruments or checking passengers and cargo.

4. The specific 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, make sharp turns of unequal magnitude and at unequal intervals and small changes in altitude to provide 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). If the aircraft is equipped with a radar jammer, maintain orientation toward the threat radar, deploy chaff, and mask the helicopter. If the helicopter is not equipped with a radar jammer, execute an immediate 90-degree turn. 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. To reduce the danger, descend immediately to NOE altitude.

NOTE: Dispensing chaff while maneuvering may cause tracking radars to break lock.

c. Fighters. When in an area where threat fighters are known or suspected to be operating, fly the helicopter at NOE 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 he 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 appropriate air combat maneuvers to break contact with or to evade threat helicopters.

e. Heat-seeking missiles. Try to keep helicopter heat sources away from the threat. If a missile is sighted, turn the tail of the helicopter away from the missile and mask the helicopter. As appropriate, employ the aircraft survivability equipment to counter heat-seeking devices while maneuvering to avoid the threat.

f. Antitank-guided missiles. Some missiles fly relatively 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 orientation toward the threat radar . Maneuver the helicopter to break the line of sight to the radar source while simultaneously activating chaff if available.

5. 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. The P and CE should monitor all instruments for an indication of a malfunction. The P* will fly the aircraft to the nearest secure location and land. After landing, the crew will inspect the aircraft to determine the extent of damage and whether flight can be continued to a medical or maintenance facility.

NOTE: Hover OGE power is required for this task.

REFERENCES:

Aircraft operator's manual
ASET Programs
FM 1-107
FM 1-112
FM 1-116
FM 1-203
FM 17-95
Unit SOP

TASK 2009

TASK: Perform multiaircraft operations.

CONDITIONS: In a UH-1 helicopter with the mission briefing completed.

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. Correctly assume a position in the helicopter to observe other aircraft in the formation.

b. Properly maintain airspace surveillance.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft for clearing and keeping track of other aircraft. He will announce any maneuver or movement prior to execution and inform the P and CE if visual contact is lost with other aircraft.

2. The P and CE will provide adequate warning to avoid traffic or obstacles detected in the flight path and identified on the map. They will inform the P* if visual contact is lost with other aircraft, if an enemy is sighted, and when their attention is focused inside the aircraft.

3. The crew will perform formation flight per AR 95-1, FM 1-107, TC 1-201, TC 1-204, and the unit SOP.

NIGHT OR NVG CONSIDERATIONS: The interval between aircraft should be increased to a minimum of three rotor disks, and changes in the formation must be kept to a minimum. All crew members must avoid fixation by using proper scanning techniques.

a. Night. During unaided night flight, the crew should use position lights to aid in maintaining the aircrafts position in the formation.

b. NVG.

(1) When conducting NVG formation flight, the crew must learn to use visual cues to maintain the aircraft's position in the formation.

(2) An additional qualified crew member, wearing NVG, will supplement the crew flying the aircraft. The third crew member may use a different type of NVG (AN/PVS-5 or AN/AVS-6) than the aviators at the controls. This crew member will position himself in the aircraft to observe other aircraft in the formation and assist in maintaining aircraft separation and obstacle clearance. If constant observation is required on both sides of the aircraft, two crew members will be used in the rear compartment to provide this observation. The fourth crew member may remain unaided or may wear the AN/PVS-5 or AN/AVS-6.

REFERENCES:

AR 95-1
FM 1-107
TC 1-201
TC 1-204
Unit SOP

TASK 2010

TASK: Perform rappelling procedures.

CONDITIONS: In a UH-1 helicopter with aircraft properly configured required checks completed and aircraft cleared.

STANDARDS:

1. **Rated.**

a. Properly conduct a thorough crew and passenger briefing.

b. Maintain appropriate hover altitude ±10 feet.

c. Maintain heading ±10 degrees.

d. Maintain position not to exceed 5 feet of drift from the intended hover point.

e. Maintain ropes in continuous contact with the ground.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Ensure that the aircraft is properly configured for rappelling operations.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will conduct a crew and passenger briefing per TC 1-201 and ensure that personnel are familiar with emergency procedures.

2. The P* will make the approach into the wind and plan to terminate the approach at an altitude that will clear the highest obstacle. He should select a stationary object approximately 50 meters in front of the aircraft and use it as a reference to maintain heading and position over the ground. He will ensure that the aircraft is at an altitude that allows approximately 20 feet of the rappelling ropes to be on the ground. During the rappelling operation the P* will use the collective to maintain altitude and be prepared to correct for CG changes as rappellers depart the aircraft.

3. The P or CE will provide the P* with information regarding the lateral and fore-and-aft drift of the aircraft. The P will also monitor cockpit indications.

4. The CE will ensure that all rappelling ropes are dropped or retrieved and secured in the aircraft prior to takeoff.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: The crew should use proper scanning techniques to avoid spatial disorientation.

REFERENCES:

Aircraft operator's manual
FM 1-400
TC 1-201
Tc 21-24
Unit SOP

TASK 2011

TASK: Perform internal rescue-hoist operations.

CONDITIONS: In a UH-1 helicopter equipped with a rescue-hoist system and with before-takeoff checks completed and aircraft cleared.

STANDARDS:

1. Rated.

a. Properly conduct a thorough crew briefing.

b. Without error, perform the rescue-hoist procedures in the aircraft operator's manual.

c. Maintain position not to exceed 5 feet of drift.

d. Maintain heading +10 degrees.

e. Correctly perform crew coordination actions.

2. Nonrated.

a. Without error, perform a preflight inspection of the rescue hoist per the aircraft operator's manual.

b. Properly operate the rescue-hoist pendant.

c. Properly maintain airspace surveillance.

d. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will conduct a thorough crew briefing and ensure that all members of the crew are familiar with emergency procedures and rescue-hoist operations. He will assign duties as necessary to the PI, CE, and MO (if available).

2. The P* will perform in-flight procedures according to TC 1-201, the aircraft operator's manual, and the unit SOP.

3. The P will clear the aircraft and, if necessary, be able to operate the control panel for the rescue hoist.

4. The CE will note any discrepancies found during the preflight inspection on the DA Form 2408-13 (Aircraft Status Information Record). He will conduct the hoist operation

according to TC 1-201, the aircraft operator's manual, and the unit SOP.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: Continuous flare illumination will improve depth perception and reference to the water's surface when the crew conducts overwater recoveries at night. Multiple smoke or marking devices deployed on the water will assist in determining wind direction and provide a visual reference for hovering. Aircraft lights normally provide adequate lighting to safely accomplish overland recoveries at night.

REFERENCES:

Aircraft operator's manual
TC 1-201
Unit SOP

TASK 2012

TASK: Perform aerial mine delivery.

CONDITIONS: In a UH-1 helicopter equipped with the appropriate mine dispersing system and given an area to be mined, a marked release point, and the required mine density.

STANDARDS:

1. Rated.

a. Correctly perform procedures for the appropriate mine dispersing system as described in the aircraft operator's manual.

b. Maintain altitude ±10 feet over the release point and area to be mined.

c. Maintain airspeed ±5 KIAS for the intensity requested.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC, PI, and CE will perform a preflight inspection of the aircraft and subsystems per the aircraft operator's manual.

2. The P will navigate to the area to be mined and will accomplish all required before-takeoff and before-landing checks per the aircraft checklist. The P will announce his intent to begin mining operations when the aircraft is in the area to be mined.

3. The P* will disperse the mines at the appropriate airspeed and altitude described in TC 1-201.

4. The P and CE will focus their attention primarily outside the aircraft and verbally clear the aircraft. They will announce when their attention is focused inside the aircraft; for example, when monitoring cockpit instruments or checking the status of the mine subsystem.

TC 1-211

REFERENCES:

Aircraft operator's manual
TC 1-201
TM 9-1345-201-12
Unit SOP

TASK 2013

TASK: Perform paradrop operations.

CONDITIONS: In a UH-1 helicopter with a jumpmaster assigned to the mission and given a designated altitude and appropriate the publications.

STANDARDS:

1. Rated.

a. The PC will properly conduct a thorough crew and passenger briefing.

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

c. Maintain airspeed ±10 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. Ensure that the aircraft is properly prepared for paradrop operations.

b. Properly maintain airspace surveillance.

c. Correctly perform crew coordination actions.

WARNING

Ensure that the jumpmaster and crew chief are wearing a safety harness, which is secured to a tie-down ring, anytime the cabin doors are opened.

CAUTION

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

DESCRIPTION:

1. The PC will thoroughly brief the crew members, jumpmaster, and parachutists. He will ensure the aircraft is properly rigged per FM 1-400 and, if applicable, the unit SOP.

2. The P* will maintain altitude, airspeed, and ground track as determined during premission planning.

3. The P will ensure that the jumpmaster or crew chief retrieves the static lines as soon as the last parachutist has cleared the aircraft.

4. The CE or jumpmaster will acknowledge all communications from the P* and P. The CE will inform the P* or P when all parachutists have exited the aircraft.

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

REFERENCES:

Aircraft operator's manual
AR 95-1
AR 95-3
FM 1-400
FM 57-230
TM 10-1670-201-23
Unit SOP

TASK 2015

TASK: Perform stability operations.

CONDITIONS: In a UH-1 helicopter with STABO equipment installed, a STABO crew assigned, and power checks completed.

STANDARDS:

1. Rated.

a. Properly conduct a thorough crew briefing.

b. Maintain adequate clearance between personnel, obstacles, and the ground.

c. Do not allow drift to exceed 5 feet.

d. Maintain airspeed ±10 knots.

e. Correctly perform crew coordination actions.

2. Nonrated.

a. Correctly prepare the aircraft for STABO operations per the unit SOP.

b. Properly maintain airspace surveillance.

c. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will conduct a thorough crew briefing and ensure that all members of the crew are familiar with emergency procedures.

2. The P* will remain focused outside the aircraft during the maneuver to ensure that all obstacles are cleared. The ascent must be at a rate that will ensure the safety of the STABO members. To avoid "jerking" the STABO members off the ground, the slack in the ropes must be removed cautiously. The P* will not start forward flight until all obstacles are cleared.

3. The P and CE must clear the aircraft and assist the P* during the pickup phase of the operation. The P* needs to know when the slack is out of the ropes and when the STABO members are off the ground and above the highest obstacle. During forward flight, the CE must constantly monitor the STABO members and keep

the P* informed of their stability. It may be necessary to reduce airspeed if they start a spin or the cone angle exceeds 30 degrees.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS:

1. For unaided night flight, the landing light and searchlight should be operational. If an NVG filter is installed, it should be removed.

2. When NVG are used, hovering with minimum drift is difficult and requires proper scanning techniques and crew member coordination . If possible, an area with adequate ground contrast and reference points should be used.

REFERENCES:

Unit SOP

TASK 2016

TASK: Perform external load operations.

CONDITIONS: In a UH-1 helicopter with an operational cargo hook and with required briefings and checks completed and the aircraft cleared.

STANDARDS:

1. **Rated.**

   a. **Hookup and hover.**

      (1) Maintain vertical ascent heading ±10 degrees.

      (2) Maintain altitude of load 5 feet AGL, ±3 feet.

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

   b. **Takeoff (below 100 feet AGL).**

      (1) Maintain takeoff heading ±10 degrees.

      (2) Maintain ground track alignment with takeoff direction.

      (3) Maintain power as required to clear obstacles safely.

   c. **Takeoff (above 100 feet AGL) .**

      (1) Maintain aircraft in trim.

      (2) Maintain airspeed ±10 KIAS.

      (3) Maintain rate of climb ±100 FPM.

   d. **En route.**

      (1) Maintain aircraft in trim.

      (2) Maintain airspeed ±10 KIAS.

      (3) Maintain safe load obstacle clearance (minimum of 50 feet AHO).

e. Approach and load release.

(1) Maintain a constant approach angle to ensure the load clears obstacles.

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

(3) Execute a smooth, controlled termination over the intended point of landing.

(4) Maintain vertical descent heading ±10 degrees.

f. Crew coordination. Correctly perform crew coordination actions.

2. Nonrated.

a. Correctly perform a preflight inspection of cargo hook and sling equipment.

b. Properly clear the aircraft and sling load during the operation.

c. Properly maintain airspace surveillance.

d. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. All crew members will assist in clearing the aircraft and will provide adequate warning of obstacles unusual drift, or altitude changes. They will announce when their attention is focused inside the aircraft.

b. The P* will take commands from the CE after the aircraft is over the sling load. These commands will be given in reference to the nose of the aircraft; for example, "Right, two feet," or "Down, two feet."

c. The P will monitor the cockpit instruments and assist the P* in clearing the aircraft. When directed by the P*, the P will "arm" the cargo hook.

d. The CE will wear a safety harness and strap that will be attached to a cargo tie-down ring. Prior to the sling-load operation. the CE will position himself as necessary to view the load. After the load is in sight, he will give the P* commands

that will center the aircraft over the load. Communications should be concise. The CE should not be monitoring outside communications during sling-load operations.

2. Procedures.

a. Hookup and hover. Place the cargo release switch in the ARM position. Follow hand signals from the signalman to hover over the load. Apply cyclic, collective, and pedals as required to remain vertically clear of and centered over the load. When the signalman indicates the load is hooked up, slowly apply collective until all slack is taken out of the sling. Make necessary corrections with the cyclic to remain centered over the load. Maintain heading with the pedals. Apply additional collective to raise the load vertically to 5 feet AGL. Monitor aircraft instruments to ensure that aircraft limitations are not exceeded.

b. Takeoff.

(1) After receiving the signal for takeoff, smoothly apply forward cyclic while increasing collective pitch to begin a coordinated acceleration and climb. Adjust pedals as necessary to maintain the desired heading. Adjust the cyclic and collective as necessary to attain a constant angle of climb that will permit safe obstacle clearance. Continue the climbout at that attitude and power until obstacles are cleared.

(2) When above 100 feet AGL or when clear of obstacles adjust attitude and power as required to establish the desired rate of climb and airspeed. Make small control movements to prevent load oscillation. After passing above 300 feet AGL, place the cargo release switch in the SAFE position.

NOTE: Ensure that the cargo switch is in the ARM position when operating at altitudes below 300 feet AHO.

c. En route. Maintain the desired altitude with the collective and the desired flight path and airspeed with the cyclic. Maintain the aircraft in trim with the pedals. Make smooth control applications to prevent load oscillation. If a lateral load oscillation occurs, reduce airspeed. If a fore-and-aft oscillation occurs, begin a shallow bank while reducing airspeed.

d. Approach and load release. When the approach angle is intercepted, decrease the collective to establish the descent. Maintain entry airspeed until the apparent ground speed and rate

of closure appear to be increasing. When passing below 300 feet AGL, place the cargo release switch in the ARM position. Progressively decrease the rate of descent and forward airspeed until a stationary hover is attained with the load 5 feet above the intended release point. (A go-around should be made before descending below obstacles or decelerating below ETL.) Slowly reduce the collective until the load rests completely on the ground, and then release the load. If ground personnel are not available, confirm the load release by hovering to a point that is higher than the sling length.

NOTE 1: Avoid flight over populated areas.

NOTE 2: Hover OGE power is required for this task. (Task 1004 discusses how to compute maximum allowable gross weight (OGE).)

NOTE 3: Before the mission, the PC will ensure that all crew members are familiar with the hand and arm signals shown in TC 1-201 and with forced landing procedures. In case of a forced landing, the aviator will land the aircraft to the left of the load. The hookup man will move in the opposite direction of the aircraft and lie facedown on the ground. The signalman will remain in place and lie facedown on the ground.

NIGHT OR NVG CONSIDERATIONS:

1. For unaided night flight, the landing light and searchlight should be operational. If an NVG filter is installed, it should be removed.

2. When NVG are used, hovering with minimum drift is difficult and requires proper scanning techniques and crew member coordination. If possible, an area with adequate ground contrast and reference points should be used.

NOTE: When the load is on the ground, excessive aircraft drift may position the sling so that it cannot be jettisoned.

3. Crews should treat visual obstacles the same as physical obstacles.

4. The rate of descent and rate of closure should be slightly slower to avoid abrupt attitude changes at low altitudes.

REFERENCES:

Aircraft operator's manual
AR 95-3
FM 1-203
FM 55-450-3
FM 55-450-4
FM 55-450-5
TC 1-201
TC 1-204
Unit SOP

TASK 2017

TASK: Perform internal load operations.

CONDITIONS: In a UH-1 helicopter loaded with passengers and/or cargo .

STANDARDS:

1. **Rated.**

a. Ensure that a thorough passenger briefing is conducted, if applicable.

b. Ensure that the maximum allowable gross weight of the aircraft is not exceeded.

c. Ensure that the aircraft is within CG limits.

d. Ensure that the passengers and cargo are properly restrained.

e. Ensure that floor loading limits are not exceeded.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Load the aircraft per the load plan.

b. Correctly perform crew coordination actions.

DESCRIPTION: The PC will formulate a load plan and ensure that a DD Form 365-4 (Weight and Balance Clearance Form - Tactical/ Transport) is completed, if required. (If cargo is loaded, the actual weight will be noted if known; if not known, the weight will be estimated.) The PC will ensure that proper cargo loading and tie-down procedures are used. The crew will ensure that passengers receive a briefing, are seated, and are wearing seat belts prior to takeoff. The P* will perform a hover power check prior to takeoff.

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

REFERENCES:

Aircraft operator's manual
AR 95-3
FM 1-203
FM 55-450-2
TC 1-201
Unit SOP

TASK 2018

TASK: Reconnoiter and recommend an LZ or a PZ.

CONDITIONS: In a UH-1 helicopter in a tactical environment.

STANDARDS:

1. **Rated.**

   a. Perform a map or photo reconnaissance of the assigned area.

   b. Recommend areas that are suitable for use as landing or pickup zones.

   c. Provide accurate and detailed information to supported units.

   d. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will conduct a crew briefing with specific instructions as to the number and size of the actual and decoy PZs or LZs.

2. The P* will remain focused outside the aircraft to provide obstacle and terrain clearance. He will announce his intended direction of flight to accomplish the reconnoiter and his recommendations for a suitable LZ or PZ.

3. The P and CE will focus their attention primarily outside the aircraft to provide adequate warning of traffic and obstacles. They will announce when their attention is focused inside the aircraft; for example, when recording information concerning the LZ or PZ or when monitoring the aircraft instruments.

4. The criteria used in selecting LZs or PZs are tactical, technical, and meteorological. When possible, the reconnaissance should be performed in a manner which will not compromise the actual location of the LZ or PZ.

a. Tactical.

(1) Mission. The most important criterion in selecting an LZ is whether the mission can be supported to and from that location.

(2) Location. To reduce troop fatigue, the LZ should be close to the unit or objective it will support.

(3) Security. Security requirements vary, depending on the general location and purpose. An aviation unit must depend to a great extent on the supported unit for active security. Landing zones are usually not secured.

b. Technical.

(1) Number of aircraft. An important factor is the number of helicopters landing at the same time. It may be necessary to provide an additional landing site nearby or to land aircraft in successive flights at the same site.

(2) Landing formation. If possible, aircraft should land in the same formation in which they are flying. Formations may need to be modified for aircraft to land in restricted areas.

(3) Loads. Larger landing areas and better approach and departure routes are required for fully loaded helicopters.

(4) Surface conditions. Surface conditions must be firm enough to prevent helicopters from bogging down, creating excessive dust, or blowing snow. The area should be as free as possible of loose debris (possible foreign object damage). Normally, if the ground slope is greater than 15 degrees, helicopters cannot land safely. However, they may terminate at a hover to load or unload personnel or supplies. When the ground slope is less than 7 degrees, helicopters should land upslope. In areas where the slope is from 7 to 14 degrees, helicopters should land side slope.

(5) Size of landing zone. Helicopters require a relatively level, clear area at least 20 to 75 meters wide, depending on the type of helicopter. The area around the LZ should be clear of obstacles that could cause aircraft damage. A larger landing area is required at night.

(6) Obstacles. The approach or departure ends of landing sites should be free of obstacles. Obstacles within the landing site that cannot be eliminated must be noted. Examples are rocks, stumps, and holes.

(7) Approach or departure direction. The direction of approach or departure should be over the lowest obstacles and generally into the wind after enemy positions are considered.

c. Meteorological. Meteorological conditions must be evaluated to include ceiling, visibility, density altitude, and prevailing winds.

(1) Ceiling. Cloud base in relation to field elevation of the LZ or PZ should be considered.

(2) Visibility. The effects of sun and possibility of ground fog are factors to be evaluated.

(3) Density altitude. The density altitude is determined by pressure altitude, temperature, and humidity. (For planning purposes, as density altitude increases the size of the landing site must be increased proportionately; this is because the lift capabilities of helicopters generally are decreased.)

(4) Prevailing winds. When aviators analyze the approach or departure route and the prevailing winds, the more important factor is the best approach or departure route. The ability to land in a crosswind or land downwind will vary depending on the type of aircraft. Smaller aircraft are more vulnerable to crosswinds or tail winds than larger, more powerful aircraft.

5. The LZ or PZ reconnaissance should be recorded on a work sheet. This will provide the commander a graphic illustration as well as tabulated information.

NIGHT OR NVG CONSIDERATIONS: TC 1-204 contains details about night and NVG considerations.

REFERENCES:

Aircraft operator's manual
FM 1-116
FM 17-95
TC 1-204

TASK 2019

TASK: Perform a route reconnaissance.

CONDITIONS: In a UH-1 helicopter with a mission briefing and map reconnaissance completed.

STANDARDS:

1. **Rated.**

   a. Correctly perform a route reconnaissance.

   b. Make an accurate and a detailed report.

   c. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will conduct a thorough crew and mission briefing and will define scan sectors for each crew member.

2. The P* will scan the sector from the 12 o'clock position to 90 degrees on his side of the aircraft (the 3 or 9 o'clock position). The P will scan the sector on his side of the aircraft. The P should record all information. The CE and additional crew members will scan sectors assigned by the PC.

3. The aircrew conducts a route reconnaissance to obtain detailed information about a specific route and all adjacent terrain where the enemy could influence movement along the route. The reconnaissance may be oriented on a road, an axis, an air route, or a general direction of advance. The crew may also conduct a route reconnaissance mission--

a. To support movement of supplies or other units.

b. To develop the enemy situation ahead of a friendly force.

c. To obtain information about an enemy force moving along a specific route.

d. To locate sites for constructing hasty obstacles to impede enemy movement.

4. To perform a route reconnaissance, the aircrew must know certain information about the route. This information includes--

a. Designation of route. This may consist of a name (for example, Highway 84 or Jones Road), a trace of the route, or coordinates along the route.

b. Limits of route. This may be indicated by coordinates or any definite ground reference such as a town, bridge, or road junction.

c. Time of day route will be used. This may change the desirability of using a route. Curves and narrow roads are more critical at night than during the day.

d. Type and number of units or vehicles. This is an important factor in determining whether a route is usable. Route requirements for infantry, armor, artillery, or transportation units will be different. For example, many transportation units may pass without difficulty, but a few tanks may ruin the surface of the route.

5. When the crew reconnoiters ground routes, it must check roads, bridges, tunnels, underpasses, and cross-country segments. It must also classify the routes.

a. Roads. The crew must consider many factors in classifying roads. These factors include--

(1) Surface type. The surface may be concrete, blacktop, sand, gravel, or clay.

(2) Width. The width is estimated and expressed in the number of lanes. The same road might provide two lanes for 2 1/2-ton trucks but only one lane for M60 tanks.

(3) Drainage. This is an important consideration if the road surface is gravel, clay, or sand. The crown height determines the effectiveness of drainage. The road and ditches should be checked for standing water during wet seasons.

(4) Surface condition. Combat damage, cuts, craters, dirt slides, ruts, cracks, or excessive erosion are important surface condition elements.

(5) Grades and curves. Steep grades and sharp curves reduce the suitability of the road for use and are likely enemy ambush sites.

(6) Drive-off capability. The shoulder condition, width, and slope determine whether vehicles can be parked off the roadway.

(7) Concealment. Trees which overhang the shoulders offer limited concealment for parked vehicles.

b. Bridges, tunnels, and underpasses. These are difficult to classify from aerial observation. In some cases, the aircrew may have to dismount to make the classification. Bridges are reconnoitered to determine the type, condition, dimensions, bypass capability, and load-carrying capacity. (FM 5-36 provides instructions on classifying bridges.) Tunnels and underpasses are reconnoitered to determine their dimensions and bypass capabilities. When possible, engineer support should be used for classification.

(1) Construction type and condition (steel, concrete, wood, or brick. If the bridge has received combat damage, it may need to be repaired before it is used.

(2) Length and width. The length of one span is estimated and multiplied by the number of spans. The width is estimated and expressed in the number of lanes; for example, two lanes, 2 1/2-ton truck traffic. The crew can use map distance to estimate tunnel length.

(3) Clearance. Tunnel and underpass clearances are measured from the road surface to the lowest overhead obstruction .

(4) Location. The accuracy of the map should be double-checked.

(5) Bypass condition. A bypass condition should be identified regardless of the condition of the bridge, tunnel, or underpass. The three bypass conditions are bypass easy, bypass difficult, and bypass impossible.

(a) Bypass easy. This means that a US 2 l/2-ton, 6 x 6 truck or NATO equivalent can cross the obstacle within the immediate vicinity of the bridge without work to improve the bypass .

(b) Bypass difficult. This means that the obstacle can be crossed within the immediate vicinity of the

bridge, but some work is required to prepare the bypass. If engineer or engineer-type support is required, the bypass is considered difficult unless the unit has the organic capability or equipment to cross rapidly. For example, assume a 20-foot gap is the obstacle. An armor battalion with an armored vehicle launched bridge could bypass easily by bridging the gap. However, if the bypassing unit is a transportation unit, the bypass is considered difficult because engineer-type support is required.

(c) Bypass impossible. This means that the bypass can be crossed only by repairing the existing bridge, constructing a new bridge, or establishing a bridge detour. A detour is an alternative route which crosses the obstacle at some distance from the bridge site.

c. Cross-country segments. The aircrew must conduct a careful reconnaissance of critical terrain (for example, high-ground passes) and report any conditions that would slow traffic.

d. Ground route classification. A ground route is classified by width, type, and load-carrying capacity. If a large portion of the route is four-lane expressway but a small segment is two-lane gravel, the overall classification would be two-lane, limited, all-weather, medium-duty. The method of expressing ground route classification is--

(1) Width. The width is expressed in number of lanes (width of 2 1/2-ton truck) of the narrowest road in the route.

(2) Type. The least desirable type of road surface is expressed as X, Y, or Z.

(a) All-weather (type X). A type X road, with reasonable maintenance is passable throughout the year with the volume of traffic never significantly less than the road's maximum capacity in good weather. This type of road has a waterproof surface and is only slightly affected by rain, frost, thaw, or heat. It is not closed to traffic because of weather other than snow blockage. Examples are concrete or bituminous roads.

(b) Limited all-weather (type Y). A type Y road, with reasonable maintenance can be kept open in bad weather to a volume of traffic which is considerably less than its normal good-weather capacity. This type of road does not have a waterproof surface and is affected by rain, frost, or thaw. Examples are crushed rock or gravel roads.

(c) Fair weather (type Z). A type Z road becomes quickly impassable in bad weather and cannot be kept open by normal maintenance. It is seriously affected by rain, frost, or thaw. Examples are natural or stabilized soil, sand, clay, shell, or cinder roads.

(3) Load-carrying capacity. Load-carrying capacity is determined by the classification of the heaviest class of vehicles that can use the entire route in convoy. This is normally governed by the classification of the weakest bridge on the route. Otherwise, it is the load-bearing capacity of the road surface.

6. The principles of an air route reconnaissance are the same as those for a ground route, except that the areas of interest are different. Movement by air is concerned primarily with the location of enemy forces, ease of navigation location of landing sites and zones, and hazards to flight. Hazards to flight include the antiaircraft areas, overwater routes, and mountainous areas.

7. A river reconnaissance is performed in the same manner as a route reconnaissance, except that a river is an obstacle to the advancement of ground elements. Considerations include width, estimated depth, flow rate, bank and bed conditions, and crossing sites.

8. There are many acceptable methods that the aircrew can use to record reconnaissance information about a route. Whatever method is used, it should be simple and contain all pertinent information about the route. An acceptable method is to number all important features along the route as they are drawn on the map. Pertinent information corresponding to the same terrain features on the map can then be written on a self-made work sheet. A good work sheet can be invaluable during a route reconnaissance. (FM 5-36 contains additional information about the work sheet.)

REFERENCES:

Aircraft operator's manual
FM 1-116
FM 5-36
FM 17-95

TASK 2020

TASK: Call for and adjust indirect fire.

CONDITIONS: In a UH-1 helicopter, in a training or tactical environment with an artillery Unit, or orally in a classroom environment.

STANDARDS:

1. Rated.

a. Remain oriented on the target while relocating the aircraft.

b. Properly mask and unmask the aircraft as required.

c. Accurately adjust indirect fire on the target using the appropriate call-for-fire element.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Targets.

a. Planned. Planned targets may be scheduled or on call . They should be planned against confirmed, suspected, or likely enemy locations and on prominent terrain to serve as reference points for shifting fires onto targets of opportunity.

b. Unplanned. Targets of opportunity are engaged by one of two methods: grid or shift from a known point. Subsequent adjustments are made based on a reference line.

2. Crew Actions.

a. The crew will determine the need to call for or adjust fire. The P will make the call. He will indicate the target location by either grid coordinates or shift from a known point and will adjust fire per FM 6-30.

b. The P* will remain focused outside the aircraft to provide obstacle clearance during the maneuver. He should not

unmask the aircraft in the same location more than once. The P should request the time of flight of the rounds. He can use this information to direct the P* to unmask just in time to observe the rounds impact. Alternatively, the P may request "splash," which gives him about five seconds of time before impact. The CE will maintain airspace surveillance and perform any other duties as directed by the PC.

REFERENCE:

FM 6-30

TASK 2022

TASK: Perform aerial radio relay.

CONDITIONS: In a UH-1 helicopter equipped with the appropriate communications equipment in a tactical environment, and given SOI.

STANDARDS:

1. **Rated.**
   - **a.** Identify and tune the appropriate frequency.
   - **b.** Properly establish contact with the message sender.
   - **c.** Without error, authenticate, if required.
   - **d.** Properly establish contact with the message receiver.
   - **e.** Correctly perform crew coordination actions.
2. **Nonrated.**
   - **a.** Properly maintain airspace surveillance.
   - **b.** Correctly perform crew coordination actions.

DESCRIPTION: The PC will assign duties as required. The P will follow the radio operation procedures outlined in the aircraft operator's manual and tune the assigned frequency. He must keep transmissions to a minimum to assist in avoiding enemy detection. The CE will maintain airspace surveillance.

REFERENCES:

Aircraft operator's manual
FM 24-1
FM 24-35
FM 24-35-1

TASK 2044

TASK: Perform actions on contact.

CONDITIONS: In a UH-1 helicopter and in a simulated tactical environment; or orally in a classroom environment.

STANDARDS: Use the correct actions on contact consistent with the tactical situation.

DESCRIPTION:

1. **Rated.**

   a. If appropriate, immediately deploy to a covered and concealed position using suppressive fires.

   b. Continue observation as appropriate to the mission.

   c. Report the situation.

   d. Develop the situation.

   e. Choose a course of action (normally dictated by the unit commander).

   f. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION: The P* will fly the helicopter to a concealed area, using evasive maneuvers as required. The PC will choose a course of action that supports the intent of the unit commander's directives. The CE will maintain airspace surveillance and perform other duties as directed by the PC.

NOTE: Evasive maneuvers and tactical reports are covered in Tasks 2008 and 2091.

REFERENCES:

FM 1-116
Unit SOP

TASK 2046

TASK: Prepare aircraft for mission.

CONDITIONS: In a UH-1 helicopter and given a warning order or mission briefing and available mission equipment.

STANDARDS:

1. Correctly install, secure, inspect, and inventory all mission equipment.

2. Properly prepare the aircraft for the following missions, as applicable:

a. Rescue-hoist operations.

b. Hospital transfer of four patients.

c. Field site pickup of four patients.

d. Mass casualty evacuation.

e. External load operations.

DESCRIPTION: After receiving a mission briefing, determine the mission equipment that must be installed, secured, inventoried, and operational prior to flight. Check the equipment that requires aircraft power for operation per procedures (cockpit equipment checks) in the operator's and crewmember's checklist. Write up the equipment deficiencies on DA Form 2408-13 (Aircraft Status Information Record).

REFERENCES:

Aircraft operator’s manual
DA Pamphlet 738-751
Operator’s and crewmember's checklist
Unit SOP

TASK 2066

TASK: Perform a zone reconnaissance.

CONDITIONS: In a UH-1 helicopter in a training or tactical environment.

STANDARDS:

1. Rated.

a. The PC will conduct a thorough crew and mission briefing.

b. Conduct a detailed map reconnaissance.

c. Make specific and timely reports about information obtained during the zone reconnaissance.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will focus his attention primarily outside the aircraft. He will acknowledge and respond to all commands given by the P for navigation purposes. To aid in navigation, he will announce significant terrain features.

2. The P and CE will divide their attention between the inside and the outside of the aircraft. They will announce when their attention is focused inside the aircraft.

3. The aircrew will conduct a zone reconnaissance to obtain information about natural and man-made features within specified boundaries. The purpose may be to locate suitable routes of advance for main elements (air or ground) or to find the enemy.

4. After receiving the mission assignment, the aircrew should conduct a detailed map reconnaissance and analyze the known enemy situation according to the factors of METT-T. The PC should select the mode of terrain flight and technique of movement that will best accomplish the mission. (Task 2081 describes terrain flight modes, and Task 2082 describes techniques of movement.)

5. A zone reconnaissance is a detailed reconnaissance. Therefore, the aircrew must check--

a. Fording sites.

b. Trails for recent use.

c. Densely wooded areas for stay-behind or ambush units.

d. Hilltops and dominant man-made features for observation posts.

e. Bridges for condition, location, demolition, and classification.

6. Before departing on the mission, the aircrew should confirm the radio frequencies and call signs of other aircraft as well as available artillery support. In addition, the crew must be prepared to call for artillery support.

7. The aircrew must report the evidence or absence of enemy activity. It must also provide specific reports about route conditions; checkpoint times, and any other information requested. Reports must be timely and specific.

REFERENCES:

FM 17-95

TASK 2067

TASK: Perform an area reconnaissance.

CONDITIONS: In a UH-1 helicopter in a training or tactical environment.

1. Rated.

a. Conduct a thorough crew and mission briefing.

b. Conduct a detailed map reconnaissance.

c. Make specific and timely reports about information obtained during the area reconnaissance.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will focus his attention primarily outside the aircraft. He will acknowledge and respond to all commands given by the P for navigation purposes. To aid in navigation, he will announce significant terrain features.

2. The P and CE will divide their attention between the inside and the outside of the aircraft. They will announce when their attention is focused inside the aircraft.

3. An area reconnaissance is conducted when the commander desires information about a town, ridgeline, wooded area, or other feature that may be critical to the operation. The specific area to be reconnoitered is designated by a boundary line that completely encloses the area.

4. After receiving the mission, the aircrew must carefully study the factors of METT-T and conduct a detailed map reconnaissance. Emphasis should normally be placed on reaching the area quickly . The aircrew must carefully coordinate passage in and out of friendly lines and select alternate routes for the return flight . Enemy situations encountered en route must be reported and, if possible, bypassed.

5. An area reconnaissance is conducted the same as a zone reconnaissance, except in the manner of movement to and from the area. (A zone reconnaissance is described in Task 2066.) The town, road junction, or other area, as well as the controlling terrain, must be thoroughly reconnoitered. Typical area objectives that the aircrew may reconnoiter include--

a. PZs and LZs.

b. Key terrain.

c. Choke points.

d. Assembly areas.

e. Field trains sites.

f. Specific areas of NBC activity.

g. Forward arming and refueling points.

h. Danger areas such as bridges, tunnel, and fords.

REFERENCES:

Aircraft operator's manual
FM 17-95

TASK 2073

TASK: Perform standard autorotation.

CONDITIONS: In a UH-1 helicopter, with emergency procedures training criteria outlined in AR 95-1 met and before-landing check completed, and given the entry altitude and airspeed.

STANDARDS:

1. **Rated.**

   a. Establish entry altitude as directed ±100 feet.

   b. Establish entry airspeed as directed ±10 KIAS.

   c. Establish airspeed 70/80 KIAS, +10 to -5 KIAS, before reaching 100 feet AGL.

   d. Perform a smooth, progressive deceleration.

   e. Apply initial pitch at approximately 15 feet AGL.

   f. Maintain heading alignment at touchdown ±5 degrees.

   g. Perform a smooth, controlled termination.

   h. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

C A U T I O N

Do not lower collective pitch to provide braking action.

DESCRIPTION:

1. RCM Actions.

a. P*.

(1) Maintain entry altitude and airspeed as directed until reaching the entry point. Initiate the maneuver by lowering the collective to the fully down position. Retard the throttle to engine-idle stop, and adjust the pedals to maintain trim. Maintain ground track while crabbing (above 100 feet) and slipping (below 100 feet) the helicopter. Adjust the cyclic to attain a 70-knot/80-knot attitude. Call out rotor RPM, gas producer, and aircraft in trim. Before reaching 100 feet AGL, ensure that a steady-state autorotation is attained. If it is not attained, execute a go-around or terminate with power as appropriate. A steady-state autorotation means that--

(a) Rotor RPM is within limits.

(b) Aircraft is at the correct airspeed.

(c) Aircraft is descending at a normal rate.

(d) Aircraft is in a position to terminate in the intended landing area.

(2) At approximately 100 feet AGL, apply aft cyclic to initiate a smooth, progressive deceleration. Maintain aircraft alignment with the touchdown area by properly applying pedals and cyclic. Adjust the collective, if required, to prevent excessive rotor RPM. At approximately 15 feet AGL, apply sufficient collective to control the rate of descent and ground speed. (The amount of collective applied and rate of application will depend on the rate of descent and ground speed.) Adjust the cyclic to attain a landing attitude just before touchdown and apply collective as necessary to cushion the landing. After touchdown, maintain ground track alignment with the pedals. When the aircraft has come to a complete stop, lower the collective and neutralize the pedals and cyclic.

b. P. Confirm that the rotor RPM is staying within limits, the gas producer is operating normally, and the aircraft is in trim. Ensure that a steady-state autorotation is attained by checking the appropriate aircraft instruments.

2. NCM Actions. The CE will continually monitor the condition of the aircraft. He will clear the aircraft using the call and response method and perform other duties as directed by the PC.

NIGHT OR NVG CONSIDERATIONS:

1. Attitude control is critical during night autorotations. The lack of visual references at night reduces the aviator's ability to estimate airspeed and altitude. To compensate for the lack of visual references, the aviator will attain a steady-state autorotation before reaching 200 feet AGL. If the searchlight or landing light is used, it should be turned on prior to reaching 100 feet AGL.

2. This training task is prohibited while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203

TASK 2074

TASK: Perform low-level autorotation.

CONDITIONS: In a UH-1 helicopter; with the emergency procedures training criteria in AR 95-1 met and the before-landing check completed; given the entry altitude and airspeed; and with the aircraft aligned with the touchdown area.

STANDARDS:

1. **Rated.**

   a. Establish entry altitude as directed ±10 feet.

   b. Establish entry airspeed as directed ±10 KIAS.

   c. Perform a smooth, progressive deceleration.

   d. Apply initial pitch at approximately 15 feet AGL.

   e. Maintain heading alignment at touchdown ±5 degrees.

   f. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

CAUTION

Do not lower collective pitch to provide braking action.

DESCRIPTION:

1. **RCM Actions.**

a. P*. On the base leg, establish an angle of descent to arrive at an altitude of 50 feet AHO prior to the entry point while maintaining visual contact with the larding area. Establish an entry point which ensures touchdown in the intended landing area. At the point of entry, ensure that the aircraft is at the proper altitude and airspeed and in trim with cruise power applied. Simultaneously, lower the collective to the fully down

position, retard the throttle to engine-idle stop, and apply aft cyclic to maintain entry altitude. Maintain rotor RPM within limits, and adjust the pedals to maintain aircraft alignment with the landing area. Apply cyclic to maintain entry altitude until intercepting a standard autorotational descent profile. Check the gas producer and rotor RPM visually. As the aircraft begins to descend, terminate the maneuver the same as for a standard autorotation (Task 2073).

b. P. Complete the before-landing check, and assist in maintaining obstacle clearance. Visually confirm that the gas producer is operating normally and that the rotor RPM is being maintained within operating limits.

2. NCM Action. The CE will continually monitor the condition of the aircraft. He will clear the aircraft using the call and response method and will perform other tasks as directed by the PC.

NIGHT OR NVG CONSIDERATIONS:

1. Attitude control is critical during night autorotations, especially at entry. To avoid spatial disorientation, crew members should turn on the searchlight or landing light before entry and use proper scanning techniques throughout the maneuver.

2. This training task is prohibited while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203

TASK 2077

TASK: Perform simulated antitorque malfunction (fixed pedal setting) .

CONDITIONS: In a UH-1 helicopter; with the emegency procedure training criteria in AR 95-1 met and the before-landing check completed; and given the entry altitude and airspeed.

STANDARDS:

1. **Rated.**

   a. Establish entry altitude as directed ±100 feet.

   b. Establish entry airspeed as directed ±10 KIAS.

   c. Maintain a constant approach angle.

   d. Maintain ground track alignment with the landing direction.

   e. Maintain landing area alignment at touchdown ±10 degrees.

   f. Perform a smooth, controlled termination.

   g. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.** The P* will remain focused outside the aircraft. The P and CE will monitor the aircraft condition, clear the aircraft verbally, and perform other duties as directed by the PC. The P also will monitor the aircraft instruments and inform the P* when his attention is focused inside the aircraft.

2. **Procedures.**

   a. Right pedal setting. On the downwind leg, the P* will remove the mechanical slack from the throttle while maintaining 6600 RPM. On the base leg, he will descend to the appropriate altitude. On the final leg, the P* will ensure the aircraft is at the proper altitude and airspeed and in trim with

cruise power applied. The IP will then establish a nose-right, out-of-trim condition (maximum 10 degrees), not to exceed 20 degrees from the runway heading. After intercepting the shallow approach angle, the P* will adjust the collective, as necessary, to maintain the angle. He will maintain entry airspeed until the apparent ground speed and rate of closure appear to be increasing. The P* will progressively decrease the rate of descent and rate of closure. He must plan to arrive over the first one-third of the landing area approximately 2 feet above the ground at the minimum airspeed for directional control. He will then reduce the throttle as necessary to overcome the yaw effect (nose right) . When the aircraft is aligned with the intended landing direction, the P* will adjust the collective as necessary to cushion the landing. After ground contact, he will adjust the collective, cyclic, and throttle to maintain aircraft alignment with the landing direction. When the aircraft has come to a complete stop, the P* will reduce the collective to the fully down position and neutralize the pedals and cyclic.

b. Left pedal setting. On the downwind leg, the P* will remove the mechanical slack from the throttle while maintaining 6600 RPM. On the base leg, he will descend to the appropriate altitude. On the final leg, the P* will ensure that the aircraft is at the proper altitude and airspeed and in trim with cruise power applied. The IP will then establish a nose-left, out-of-trim condition (maximum 10 degrees), not to exceed 20 degrees from the runway heading. After intercepting the shallow approach angle, the P* will adjust the collective as necessary to maintain the angle. He will maintain entry airspeed until apparent ground speed and rate of closure appear to be increasing. He will then progressively decrease the rate of descent and rate of closure. The P* will plan to arrive over the first one-third of the landing area approximately 2 feet above the ground at or slightly above ETL. (If the nose of the aircraft is aligned with the landing direction at a higher ground speed, the P* will allow the aircraft to touch down at that speed.) If the nose is to the left, the P* will maintain altitude with the collective while decreasing forward speed until the aircraft is aligned with the landing area. He will continue the rest of the maneuver as stated in 2a above.

NOTE 1: After touchdown, aircraft heading may not be controllable with the throttle and collective. If this happens, the P* will position the cyclic to follow the turn until the aircraft has come to a complete stop.

NOTE 2: For training, airspeeds of 60/70 knots on crosswind and base legs and 80/90 knots on the downwind leg are recommended.

NOTE 3: In case of an in-flight emergency that results in fixed tail rotor pitch settings, the crew should use the procedures outlined in the aircraft operator's manual.

NIGHT OR NVG CONSIDERATIONS: This training task is prohibited at night or while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203

TASK 2078

TASK: Perform terrain flight mission planning.

CONDITIONS: Prior to flight in a UH-1 helicopter and given a mission briefing, navigational maps, a navigational computer, and other required materials.

STANDARDS:

1. Rated.

a. Correctly analyze the mission.

b. Perform a map or photo reconnaissance, and ensure that hazards to terrain flight are plotted.

c. Select the appropriate terrain flight modes.

d. Select the appropriate primary and alternate routes.

e. Obtain and evaluate the weather briefing.

f. Conduct a thorough crew briefing.

g. Correctly perform crew coordination actions.

2. Nonrated.

a. Complete the tasks assigned by the PC.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will delegate mission tasks to crew members and will have the overall responsibility for mission planning. He will analyze the mission in terms of METT-T.

2. The crew will perform the following actions as directed by the PC: Plan the flight by conducting a map or an aerial photo reconnaissance. Obtain a thorough weather briefing that covers the entire mission. (This briefing must include sunset and sunrise times, density altitudes, winds, and visibility restrictions. If the mission is to be conducted at night, the briefing also must include moonset and moonrise times and ambient light levels.) Determine primary and alternate routes, terrain flight modes, and movement techniques. Also determine time, distance, and fuel requirements. Annotate the map or overlay with sufficient information to complete the mission. Consider

such items as hazards, checkpoints observation posts, and enemy and friendly positions. Review the contingency procedures.

3. The PC/AMC will brief the mission; if time permits, the crew will rehearse the important aspects of the mission. All personnel involved in the mission should be present for the briefing.

NIGHT OR NVG CONSIDERATIONS: More detailed flight planning is required when the flight is conducted in reduced visibility at night, or in the NVG environment. TC 1-204 contains details about 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 UH-1 helicopter and given a mission briefing and required maps and materials.

STANDARDS:

1. Rated.

a. During NOE flight (using NVG: skids clear of trees and vegetation in the flight path up to 25 feet AHO)--

(1) Know the en route location within 200 meters (using NVG, within 500 meters).

(2) Locate the final objective within 100 meters.

b. During contour or low-level flight (using NVG: contour, from 25 to 80 feet AHO; low-level, above 80 feet AHO)--

(1) Know the en route location within 500 meters (using NVG, within 1,000 meters).

(2) Locate the final objective within 100 meters.

c. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft and respond to navigation instructions and cues given by the P. He will acknowledge commands issued by the P for the heading and airspeed changes necessary to navigate the desired course. The P* will announce significant terrain features to assist the P in navigation.

2. The P will direct the P* to change 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. He will announce all plotted wires prior to approaching their location. The P will focus his attention primarily inside the aircraft; however,

as his workload permits, he will assist in clearing the aircraft and provide adequate warning of traffic and obstacles.

3. Terrain flight navigation requires the crew to work as a team. The P furnishes the P* with the information required to remain on course. The P will use rally terms and terrain features to convey instructions to the P*. Examples of these terms are “Turn left," "Stop turn," and "Turn down the valley to the left." If using the RMI during low-level flight, the P may include headings. To assist the P, the P* will point out terrain features as the aircraft approaches them. Crew members should use standardized terms to prevent misinterpretation of information and unnecessary cockpit conversation. They must look far enough ahead of the aircraft at all times to assist in avoiding traffic and obstacles.

a. During NOE flight, the crew may use several navigational techniques. In one technique, the crew identifies prominent terrain features that are located some distance ahead of the aircraft and lie along or near the course. Using these points to key on, the P* can maneuver the aircraft to take advantage of the terrain and vegetation for concealment. If general navigational techniques do not apply, the P must identify the desired route by designating a series of successive checkpoints. To remain continuously oriented, the P must compare actual terrain features with those on the map.

b. Contour navigation is less precise than NOE navigation because the contour route is more direct. An effective technique is for the P to combine the use of terrain features and rally terms when giving directions to the P*. This will allow the P* to focus his attention outside the aircraft.

c. For low-level navigation, the P can effectively compute time and distance. This means that he can tell the P* to fly specific headings and airspeeds. The crew can also use radio navigation depending on the terrain and enemy situation.

NOTE 1: If the area permits, the crew should navigate at least 20 kilometers during NOE flight training or 40 kilometers during low-level or contour flight training.

NOTE 2: Each of the methods for stating heading information is appropriate under specific conditions. When a number of terrain features are visible and prominent enough for the P* to recognize them, the most appropriate method is navigation instruction toward the terrain feature in view. Navigation instruction toward a distant, unseen terrain feature is appropriate when few changes are anticipated. When forward visibility is restricted

and frequent changes are necessary controlled turning instructions are more appropriate. As a general rule, clock headings by themselves should be avoided. However, clock headings are recommended when associated with a terrain feature and with controlled turning instructions.

NIGHT OR NVG CONSIDERATIONS:

1. Conducting the flight in reduced visibility or at night (aided or unaided) requires flight planning and map preparation. TC 1-204 contains details on night navigation. NVG navigation with standard maps can be difficult because of map colors and symbology.

2. The crew must use proper scanning techniques to ensure obstacle avoidance.

3. Airspeed and altitude limitations are described in TC 1-210, Chapter 4.

REFERENCES:

FM 1-203
FM 1-240
FM 21-26
TC 1-201
TC 1-204
TC 1-210

TASK 2081

TASK: Perform terrain flight.

CONDITIONS: In a UH-1 helicopter and given a mission briefing and required maps and materials.

STANDARDS:

1. **Rated.**

a. During NOE flight (using NVG: skids clear of the trees and vegetation in the flight path up to 25 feet AHO)--

(1) Fly as close to the earth's surface as obstacles and visibility will permit.

(2) Maintain airspeed appropriate for the terrain, enemy situation weather, and visibility.

b. During contour flight (using NVG: from 25 to 80 feet AHO).

(1) Maintain an altitude that allows safe clearance of obstacles while generally conforming to the contours of the earth.

(2) Maintain an airspeed appropriate for the terrain, enemy situation, weather, and visibility.

(3) Maintain the aircraft in trim.

c. During low-level flight (using NVG: above 80 feet AHO)--

(1) Maintain altitude ±50 feet.

(2) Maintain airspeed ±10 KIAS.

(3) Maintain aircraft in trim.

d. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew Actions.

a. Terrain flying involves flight close to the earth's surface. The modes of terrain flight are NOE, contour, and low-level. Crew members will seldom perform pure NOE or contour flight. Instead, they will alternate techniques while maneuvering over the desired route. During terrain flight, the P* is primarily concerned with threat and obstacle avoidance.

b. The P* will remain focused outside the aircraft and will acknowledge all navigational and obstacle clearance instructions given by the P. He will announce the intended direction of flight or any deviation from instructions given by the P.

c. The P and CE will assist in clearing the aircraft and will provide adequate warning of obstacles, unusual attitudes, or altitude changes. The P will provide adequate warning of obstacles detected in the flight path or identified on the map. He will announce when his attention is focused inside the aircraft; for example, when monitoring aircraft systems.

2. Procedures.

a. NOE flight. NOE flight is conducted at varying airspeeds and altitudes as close to the earth's surface as vegetation obstacles and ambient light will permit.

b. Contour flight. Contour flight is characterized by varying altitude and relatively constant airspeed, depending on the vegetation, obstacles, and ambient light. It generally follows the contours of the earth.

c. Low-level flight. Low-level flight is usually performed at a constant airspeed and altitude. It generally is conducted at an altitude that prevents or reduces the chance of detection by enemy forces.

NOTE 1: Hover OGE power is required for NOE and contour flight.

NOTE 2: NVG terrain flight is considered flight below 200 feet AGL.

NIGHT OR NVG CONSIDERATIONS:

1. Wires are difficult to detect with the NVG.

2. The crew must use proper scanning techniques to ensure obstacle avoidance.

3. The crew must observe the airspeed and altitude limitations and ambient light criteria described in TC 1-210, Chapter 4, during NVG terrain flight training.

REFERENCES:

FM 1-203
FM 1-240
FM 1-400
FM 21-26
TC 1-201
TC 1-204
TC 1-210

TASK 2082

TASK: Perform techniques of movement.

CONDITIONS: In a UH-1 helicopter with mission planning completed or in a classroom.

STANDARDS:

1. **Rated.**

a. Correctly conduct tactical movement using traveling, traveling overwatch, or bounding overwatch technique.

b. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.**

a. The P* will remain focused outside the aircraft for clearing and keeping track of other aircraft. He will announce any maneuver or movement prior to execution.

b. The P and CE will provide adequate warning to avoid obstacles detected in the flight path and identified on the map. They will inform the P* if contact is lost with other aircraft or if the enemy is sighted. They will announce when their attention is focused inside the aircraft.

2. **Tactical Movement Techniques.** Techniques of movement are designed to exploit the mobility of helicopters while employing the fire and maneuver concept. The techniques of tactical movement are traveling, traveling overwatch, and bounding overwatch.

a. Traveling. This technique is used primarily when enemy contact is not likely. It is the fastest method for moving a formation of aircraft, but it provides the least amount of security. Low-level flight and contour flight at high airspeeds are used for movement.

b. Traveling overwatch. This technique is used when enemy contact is possible. It is characterized by continuous movement of main elements. The overmatching element keys its movement to the terrain and its distance from the main element. Because the range at which targets can be observed will be

limited, the overmatching element will remain well within the effective range of its weapon systems. It remains ready to fire or maneuver, or both, to support the main elements. Contour flight is used for movement. Airspeed is generally high and varied, depending on the weather, ambient light, terrain, and threat.

c. Bounding overwatch. This technique is used when enemy contact is likely and the greatest degree of concealment is required. Elements move by bounds. One element remains in position to observe, fire, or maneuver before the other element moves. Overwatching elements cover the progress of bounding elements from a covered and concealed position, which offers observation and fields of fire against potential enemy positions. Contour flight and NOE flight are used for movement. Airspeed during each bound is varied, depending on the availability of vegetation and terrain for concealment.

REFERENCES:

Aircraft operator's manual
FM 17-95
TC 1-201

TASK 2083

TASK: Negotiate wire obstacles.

CONDITIONS: In a UH-1 helicopter.

STANDARDS:

1. Rated.

a. Locate and accurately estimate the height of wires.

b. Determine the best method to negotiate the wire obstacle.

c. Safely negotiate the wire obstacle, minimizing the time unmasked.

d. Correctly perform crew coordination actions.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* or P will announce when he sees wires. He will confirm the location of wire obstacles with the other crew members.

2. The crew will discuss the characteristics of wires and accurately estimate the amount of available clearance between them and the ground to determine the method of crossing. The crew also will locate guy wires and supporting poles.

3. The P* will remain focused outside the aircraft and announce the method of negotiating the wires and initiating the maneuver. Before crossing, the crew will identify the highest wire. The P* will cross near a pole to aid in visual perception. When underlying wires, he will maintain a minimum clearance of hover height plus 25 feet and ground speed no greater than that of a brisk walk. The P* will ensure lateral clearance from guy wires and poles.

4. The P and CE will announce adequate warning to avoid hazards, wires, and poles or supporting structures. They also will announce when the aircraft is clear and when their attention is focused inside the aircraft.

NOTE: The crew must maintain proper scanning techniques to ensure obstacle avoidance and aircraft clearance.

NIGHT OR NVG CONSIDERATIONS:

1. Flight under wires should not be performed while using the NVG, unless the location has been checked during daylight conditions and all hazards have been identified.

2. Wires are difficult to detect with the NVG.

REFERENCES:

TC 1-201
TC 1-204
Unit SOP

TASK 2086

TASK: Perform masking and unmasking.

CONDITIONS: In a UH-1 helicopter with the hover power check completed.

STANDARDS:

1. **Rated.**

a. Perform a thorough map reconnaissance of the desired observation area.

b. Correctly mask the aircraft from enemy visual and electronic detection.

c. Ensure aircraft exposure time does not exceed ten seconds during the unmasking.

d. Maintain a sufficient distance behind obstacles to allow for safe maneuvering.

e. Move to a new location before subsequent unmasking.

f. Correctly perform crew coordination actions.

2. **Nonrated.**

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused outside the aircraft to clear the aircraft throughout the maneuver. He will announce the type of masking and unmasking before executing the maneuver.

2. The P and CE will focus their attention primarily outside the aircraft. They will perform a thorough map reconnaissance to identify natural and man-made features prior to the unmasking. They will warn the P* of obstacles and unusual or unanticipated drift and altitude changes. The P will announce when his attention is focused inside the aircraft; for example, when navigating or when monitoring aircraft systems.

3. The crew must clear directly below the aircraft if descending vertically or the flight path if moving laterally.

4. The crew will perform the following actions:

a. Masking in flight. With the aid of the map, the P will navigate to the objective. The P* will take advantage of terrain and vegetation to prevent exposure of the aircraft to enemy visual or electronic detection. The P will maintain orientation at all times and look ahead on the map for hazards.

b. Unmasking in flight. The P* will keep exposure the to a minimum to prevent enemy visual or electronic detection. The crew must be aware that gun dish radar can lock onto a target within two to nine seconds.

c. Unmasking at a hover (vertically). The P* will announce his intent to unmask. The P and CE will acknowledge that they are prepared to execute the maneuver. The P* will ensure that sufficient power is available to unmask. He will apply collective until he obtains sufficient altitude to see over the mask without exceeding aircraft limitations. He will maintain horizontal main rotor blade clearance from the mask in case of a power loss or a tactical need to mask the aircraft quickly. When possible, the P* will unmask at a safe distance from the mask to allow a rapid descent to a masked condition if the aircraft is detected or fired upon. He must be aware of a common tendency to move forward or rearward while vertically unmasking and remasking. He will keep aircraft exposure time to a minimum.

d. Unmasking at a hover (laterally). Sometimes, the P* may unmask by moving laterally from the mask. He 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 acknowledge that they are prepared to execute the maneuver. The P* will keep aircraft exposure time to a minimum.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: When hovering above 25 feet without aircraft lights, the P* may have difficulty in maintaining attitude and position. (The barometric altimeter is not reliable for this maneuver.) The P* should use the radar altimeter, if available, to assist in maintaining altitude. Otherwise, he must use references, such as lights, treetops, 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 by changing his viewing perspective. Hovering near ground features, such as roads, provides ideal references for judging lateral movement. However, the P* may become spatially disoriented when alternating his viewing perspective between high and low references. Therefore, he must rely on the P and CE for assistance if he becomes disoriented.

REFERENCES:

Aircraft operator's manual
FM 1-203
TC 1-204

TASK 2087

TASK: Perform terrain flight deceleration.

CONDITIONS: In a UH-1 helicopter with a hover power check completed.

STANDARDS:

1. **Rated.**

   a. Maintain heading alignment with the selected flight path ±10 degrees.

   b. Maintain the tail rotor clear of all obstacles.

   c. Decelerate to the desired airspeed or to a full stop at the selected location t50 feet.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION: The P* will initially increase the collective to maintain the altitude of the tail rotor. (When the P* initiates the maneuver at higher airspeeds, he may not need to initially increase the collective.) He will consider variations in the terrain and obstacles when determining tail rotor clearance. He will apply aft cyclic to slow to the desired airspeed or to a full stop while adjusting the collective to maintain the altitude of the tail rotor. The P* will maintain heading with the pedals and make all control movements smoothly. If he changes the aircraft attitude excessively or abruptly, he may have difficulty returning the aircraft to a level attitude and overcontrolling may result. The P and CE will remain focused outside the aircraft and will advise the P* of obstacles.

NOTE: Hover OGE power is required for this task.

NIGHT OR NVG CONSIDERATIONS: The P* must avoid abrupt changes in aircraft attitude because the NVG will limit his field of view. He should maintain proper scanning techniques to ensure obstacle avoidance and tail rotor clearance.

REFERENCES:

Aircraft operator's manual
FM 1-203
TC 1-204

TASK 2088

TASK: Identify major US or allied equipment and major threat equipment.

CONDITIONS: In a tactical or simulated tactical environment or in a classroom environment.

STANDARDS:

1. Without the use of references correctly identify major US or allied equipment expected to be in the area of operations.

2. Without the use of references, correctly identify major threat equipment expected to be in the area of operations by its NATO nomenclature per FM 1-402.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. While looking at the actual equipment or when shown pictures or mock-ups of the equipment, the crew members will correctly identify major US or allied equipment expected to be in the area of operations.

2. While looking at the actual equipment or when shown pictures or mock-ups of the equipment, the crew members will correctly identify major threat equipment expected to be in the area of operations. They must identify the equipment by its NATO nomenclature.

3. When in the aircraft, the P*, P, CE, or other crew member will announce the type and direction of the equipment detected. The other crew members will confirm the type and direction of the equipment.

REFERENCES:

FM 1-402
FM 44-30
FM 100-2-3

TASK 2090

TASK: Perform tactical communication procedures and electronic counter-countermeasures.

CONDITIONS: In a UH-1 helicopter and given SOI.

STANDARDS:

1. **Rated.**

   a. Properly operate aircraft avionics.

   b. Maintain radio discipline at all times.

   c. Properly operate voice security equipment.

   d. Correctly use the SOI.

   e. Correctly recognize and respond to enemy electronic warfare actions.

   f. Properly operate electronic sensing equipment.

   g. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will assign radio frequencies according to mission requirements during the crew briefing. He will indicate whether the P* or P will establish and maintain primary communications.

2. The P* will announce mission information not monitored by the P and any deviation from directives.

3. The P will manage and announce radio frequencies and copy and decode pertinent information. He will announce information not monitored by the P*. The P will focus his attention primarily inside the aircraft. However, as workload permits, he will assist in clearing the aircraft and will provide adequate warning of traffic or obstacles.

4. The crew should not use electronic communications in a tactical environment except when absolutely necessary. (Avionics that are not needed should be turned off.) If electronic communication is required, the best method is to operate in the

secure voice mode. To reduce transmission time and eliminate confusion, crew members must use approved communication words, phrases, and codes. (They should plan what to say before keying the transmitter.) They should transmit information clearly, concisely, and slowly enough to be understood by the receiving station. (Ideally, they should keep transmissions under ten seconds.) They must not identify a unit or an individual by name during nonsecure radio transmissions. Procedures that the crews should follow are given below.

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 an incident as soon as possible when a secure communications capability exists. (Refer to Task 2091 for information on transmitting a tactical report.)

c. SIF/IFF usage. During radio checks, select the appropriate transponder mode on the selector and test the system. Monitor the SIF/IFF reply light during the flight.

d. SAM system. Transmit signals and messages using the SAM system. This system provides 36 combinations of signals and messages that can be transmitted by using colored or numbered flip cards. FM 1-400 describes how to communicate using this system.

e. Other visual methods. Use other visual communication methods such as flags, lights, panels, pyrotechnics, hand and arm signals, and aircraft maneuvers. The unit SOP and SOI describe these methods.

NOTE: Crew members will adhere to positive flight-following procedures during tactical operations per the appropriate flight coordination center and unit SOP.

REFERENCES:

Aircraft operator's manual
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
Unit SOP

TASK 2091

TASK: Transmit a tactical report.

CONDITIONS: In a UH-1 helicopter or a classroom environment and given sufficient information to compile a tactical report.

STANDARDS:

1. Correctly transmit the appropriate report using the current SOI.

2. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* and CE will remain focused outside the aircraft to clear the aircraft of traffic or obstacles. The P* will announce any maneuver or movement prior to execution.

2. Crew members must be able to provide timely, concise reports. To save time, minimize confusion, and ensure completeness,the crew should report information in an established format. Standard formats for two different types of 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. 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

TASK 2092

TASK: Perform standard autorotation with turn.

CONDITIONS: In a UH-1 helicopter with emergency procedure training criteria outlined in AR 95-1 met and the before-landing check completed, and given the entry altitude and airspeed.

STANDARDS:

1. **Rated.**

   a. Establish entry altitude as directed ±100 feet.

   b. Establish entry airspeed as directed ±10 KIAS.

   c. Maintain 70-knot\80-knot attitude during the turn.

   d. Complete the final turn, and align the aircraft with the landing area above 200 feet AGL.

   e. Establish 70-knot\80-knot attitude before reaching 100 feet AGL.

   f. Perform a smooth, progressive deceleration.

   g. Apply initial pitch at approximately 15 feet AGL.

   h. Maintain heading alignment at touchdown ±5 degrees.

   i. Perform a smooth, controlled termination.

   j. Correctly perform crew coordination actions.

2. **Nonrated.**

   a. Properly maintain airspace surveillance.

   b. Correctly perform crew coordination actions.

CAUTION

Do not lower collective pitch to provide braking action.

DESCRIPTION:

1. RCM Actions.

a. P * .

(1) Maintain entry altitude and airspeed until reaching the entry point. Initiate the maneuver by lowering the collective to the fully down position. Retard the throttle to engine-idle stop, and adjust the pedals to maintain trim. Apply cyclic in the direction of the turn, and attain a 70-knot\80-knot attitude. (Disregard the airspeed indicator while establishing the turn.) Adjust the collective as required to maintain rotor RPM Within limits, and call out rotor RPM, gas producer, and aircraft in trim. Adjust bank as necessary to ensure that the turn is completed and the aircraft is aligned with the landing area direction before descending below 200 feet AGL. Before reaching 100 feet AGL, ensure that a steady-state autorotation is attained. If it is not attained, execute a go-around or terminate with power as appropriate. For this maneuver, a steady-state autorotation means that--

(a) Rotor RPM is within limits.

(b) Aircraft is at the correct attitude.

(c) Aircraft is descending at a normal rate.

(d) Aircraft is in a position to terminate in the intended landing area.

(2) At approximately 100 feet AGL, apply aft cyclic to initiate a smooth, progressive deceleration. Maintain aircraft alignment with the touchdown area by properly applying pedals and cyclic. Adjust the collective, if required, to prevent excessive rotor RPM. At approximately 5 feet AGL, apply sufficient collective to control the rate of descent and ground speed. (The amount of collective applied and the rate of application will depend on the rate of descent and ground speed.) Adjust the cyclic to attain a landing attitude, and apply collective, as necessary, just before touchdown to cushion the landing. After touchdown, maintain ground track alignment with the pedals. When the aircraft has come to a complete stop, lower the collective and neutralize the pedals and cyclic.

b. P. Confirm the before-landing check prior to initiating the maneuver. During the turn, check and call out the rotor RPM. Confirm that the gas producer is operating normally, the rotor RPM stays within limits, and the aircraft is in trim. Also confirm that a steady-state autorotation is attained.

2. **NCM Actions.** The CE will continually monitor the condition of the aircraft. He will clear the aircraft using the call and response method and perform other tasks as directed by the PC.

NIGHT OR NVG CONSIDERATIONS:

1. Attitude control is critical during night autorotations. The lack of visual references at night reduces the aviator's ability to estimate airspeed and altitude. To compensate for the lack of visual references, the aviator will attain a steady-state autorotation before reaching 200 feet AGL. If the searchlight or landing light is used, it should be turned on prior to reaching 100 feet AGL.

2. This training task is prohibited while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203

TASK 2093

TASK: Perform simulated hydraulic system malfunction.

CONDITIONS: In a UH-1 helicopter, with emergency procedures training criteria outlined in AR 95-1 met and the before-landing check completed.

STANDARDS:

1. Rated.

a. Perform emergency procedures for hydraulic power failure per the aircraft operator's manual.

b. Maintain altitude as directed ±100 feet.

c. Maintain airspeed as directed ±10 KIAS.

d. Maintain heading control ±10 degrees and ground track alignment with landing direction.

e. Maintain a constant shallow approach angle.

f. Execute a smooth, controlled touchdown at or slightly above ETL with landing area alignment ±5 degrees.

g. Correctly perform crew coordination actions.

WARNING

Both aviators must guard the cyclic when the HYD CONTROL switch is moved.

2. Nonrated.

a. Properly maintain airspace surveillance.

b. Correctly perform crew coordination actions.

DESCRIPTION:

1. The IP will identify the HYD CONTROL switch by placing his hand on it. He will guard the cyclic with his other hand-and inform the P* that he is turning off the hydraulic system. The P* will confirm that the hydraulic pressure is off by control feel (cyclic and pedals). If no abnormal movement of the flight

controls is detected, the IP will remove his hands from the cyclic and HYD CONTROL switch and reset the master caution light.

2. The P* will maintain the desired heading and altitude while simulating emergency procedures described in the aircraft operator's manual. When he calls for the checklist, the IP will use it to verify procedures.

3. Upon intercepting a shallow approach angle, the P* will decrease the collective, as required, to establish and maintain that angle. He will maintain airspeed until apparent ground speed and rate of closure appear to be increasing. The P* should progressively decrease the rate of descent and rate of closure to effect a touchdown at or slightly above ETL within the first one-third of the landing area. He should control the rate of descent at touchdown with the collective and maintain aircraft attitude and landing area alignment with the cyclic and heading with the pedals.

4. After touchdown, the P* will maintain ground track alignment with the cyclic and heading with the pedals and decrease the collective to slow forward speed. Once the aircraft has stopped, the P* must lower the collective to the fully down position and neutralize the pedals and cyclic. To return the HYD CONTROL switch to the ON position, the IP will guard the cyclic while directing the P* to relax pressure on the controls.

5. The P and CE will verbally clear the aircraft and perform other duties as directed by the PC.

NIGHT OR NVG CONSIDERATIONS: This training task is prohibited at night or while crew members are wearing NVG.

REFERENCES:

Aircraft operator's manual
AR 95-1
FM 1-203
Operator's and crewmember's checklist

TASK 2120

TASK: Prepare a patient for hoist operations.

CONDITIONS: In a MEDEVAC-configured helicopter having a high-performance hoist capability, using a forest penetrator, SKED, stokes litter, poleless semirigid litter, survivors' sling, or hoisting vest.

STANDARDS:

1. Properly prepare the appropriate hoisting equipment for the required hoist mission; for example, overwater, rapid river, jungle, mountain, and desert operations.

2. Properly prepare the patient for the recovery phase of the hoist mission.

3. Properly prepare the patient and aircraft for the departure phase of the hoist mission.

4. Correctly state the notes, cautions, and warnings associated with all modes of hoist operations.

DESCRIPTION:

NOTE: Refer to FM 8-10-6, Chapter 11, for the procedures for all modes of hoist operations.

1. Prepare the appropriate hoisting equipment for the hoist mission.

2. Prepare the patient for the recovery phase of the hoist mission.

3. Prepare the patient and aircraft for the departure phase of the hoist mission.

4. State the notes, cautions, and warnings associated with all modes of hoist operations.

REFERENCES:

Aircraft operator's manual
FM 8-10-6
FM 8-15

TASK 2121

TASK: Apply medical antishock trousers.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient (actual or simulated) displaying signs and symptoms of shock, a set of MAST, a stethoscope a BP cuff, a watcht a pencil, paper, and a medical doctor's order.

STANDARDS: Correctly apply the MAST within ten minutes, per STP 8-91B25-SM-TG and the description below, without causing further injury to the patient.

DESCRIPTION:

WARNING

Do not use the MAST if any of the following exist:

- Psychogenic, anaphylactic, or septic shock.
- Trauma involving significant head injury.
- Congestive heart failure with pulmonary edema.
- Bleeding chest wounds.

1. Remove the MAST and accessories from the kit.

2. Unfold and unfasten the MAST, and place them flat.

3. Place the patient in the supine position on the MAST.

4. Wrap the patient's legs and then the abdominal section in the MAST.

5. Attach the foot pump hoses, and open all valves except on the abdominal section.

6. Inflate the leg sections, close off the valves, and check the patient’s BP.

7. Inflate the abdominal section, if needed.

8. Close all stopcock valves, and monitor the BP.

9. Start an IV infusion if not already done.

10. Monitor the MAST to ensure that adequate pressure is maintained. (Trouser pressure will change as altitude changes.)

WARNING

- Ensure that the MAST are past the lowest rib on short patients.
- Use two people to apply the MAST for a pelvic fracture.
- Do not lift the casualty any higher than necessary.
- Do not use the MAST if the patient has a systolic BP of 90 or higher.
- Do not use the MAST if the patient has impaled objects protruding from the legs or abdomen or an open fracture to the lower extremities.
- Do not remove the MAST without a physician order.
- If air evacuation is necessary, fly at low level.
- Ensure that personnel at the receiving facility are familiar with the MAST and the procedure for their removal.

REFERENCE:

STP 8-91B25-SM-TG

TASK 2122

TASK: Operate the portable suction apparatus.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient (actual or simulated), a portable suction apparatus with a catheter, and manufacturer's instructions.

STANDARDS: Correctly operate the portable suction apparatus according to the manufacturer's instructions. The patient's airway is cleared properly with the suction apparatus using the technique specified in STP 8-91B25-SM-TG.

DESCRIPTION:

1. Prepare and test the suction apparatus for operation according to the manufacturer's instructions.

2. Ensure that the battery, which operates the suction apparatus, is adequately charged.

3. Clear the patient's airway properly using the suction apparatus.

4. Clean the suction apparatus after each use according to the manufacturer's instructions.

REFERENCES:

Manufacturer's instructions
STP 8-91B25-SM-TG

TASK 2123

TASK: Restrain a patient.

CONDITIONS: In a MEDEVAC-configured helicopter and given a patient (actual or simulated), a restraint set, litter straps, KERLIX, and pads.

STANDARDS: Properly restrain the patient as specified in the description unless the physician orders otherwise.

DESCRIPTION:

1. Tell the patient gently and repeatedly why the device is being used, whether the patient seems able to respond or not.

NOTE: Assure the patient that someone will always be near to help and care for him. Remember that the normal reaction of a confused patient is to resist restriction of movement.

2. Apply and use the restraint device to prevent patient injury.

3. Restrain the patient as follows:

a. Place the anklets and wristlets with the suede side against the patient, padding them as needed, and insert the metal loop in the slot providing the tightest position.

b. Insert the anklet or wristlet straps through the loops and lock them.

c. Use the litter straps, as needed.

d. Check for proper circulation in the patient's extremities.

REFERENCES:

Manufacturer's instructions
FM 8-230

TASK 2124

TASK: Assist with an emergency delivery.

CONDITIONS: In a MEDEVAC-configured helicopter, in an emergency situation, and given a patient (actual or simulated) and no sterile supplies.

STANDARDS: Correctly assist the patient with an emergency delivery according to the description below.

DESCRIPTION:

1. Position the patient on a bed, sturdy table, or litter on her back with her knees bent and separated as far apart as possible.

2. Expose the patient's perineum by removing any constricting clothing below the waist or by moving the clothing up above the waist.

3. Place the cleanest item available, such as a sheet or towel, under the patient. (Place a raincoat or blanket under the patient if she must lie on the floor.)

4. Watch for crowning (emergence of the top of the baby's head at the vagina). Be firepared to support the baby's head as it emerges.

5. Have the patient pant with each contraction. Permit the baby's head to deliver between contractions, if possible. (This will avoid perineal tears and trauma to the infant's head caused by a sudden release of pressure.)

6. Support the baby's head by cradling it between your hands. Do not pull or exert any pressure on the head.

7. Help the baby's upper shoulder out while supporting the baby's head in a downward position.

8. Help the baby's lower shoulder out while supporting the baby's head in an upward position.

9. Use the cleanest item available to receive the baby. Note the time when the baby is born, if possible. Also note the approximate location for legal registration.

10. Pick up the baby to allow mucous and fluid to drain from his mouth and nose. Hold the baby firmly because a newborn is

slippery. (The baby will probably breathe and cry almost immediately. Soon after this cry, the cord will become limp and no longer pulsate; the blood flow ceases because the baby no longer needs it.)

11. Raise the baby's hips slightly higher than the baby's head so that drainage can continue.

a. Do not pull on the cord when picking up the baby.

b. Use your fingers to clear the baby's mouth of excessive mucous.

12. As soon as the baby is breathing and crying, wrap him in a blanket (if available). Do not tie or cut the cord. Place the baby on his side on the mother's abdomen.

13. Wait for the delivery of the placenta. Never pull on the cord to check for placenta separation.

14. Grasp the placenta gently, arid rotate it when it appears at the vagina. Do not pull, but slowly and gently guide the placenta and attached membranes from the mother's body.

15. Check the baby's color and respiration. Encourage the baby to cry vigorously by gently flicking the soles of his feet.

REFERENCE:

FM 8-230

TASK 2125

TASK: Operate the portable heart rate monitor.

CONDITIONS: In a MEDEVAC-configured helicopter or in a classroom setting arid given a patient (actual or simulated) requiring monitoring, a portable heart-rate monitor with all related equipment, EKG paste, and manufacturer's instructions.

STANDARDS:

1. Properly prepare the monitor per the manufacturer’s instructions.

2. Properly place the EKG recorder terminal leads and attach them to the patient and monitor.

3. Correctly identify the patient's heart rate and normal sinus rhythm on the monitor.

DESCRIPTION:

1. Prepare the equipment and activate and adjust the monitor per the manufacturer’s instructions.

2. Apply and secure the leads at the proper locations on the extremities and chest. (The locations may be specified by the physician.)

3. Ensure that the power source is fully charged.

4. Replace the EKG paper as needed.

REFERENCES:

Manufacturer's instructions

TASK 2126

TASK: Relay patient information to medical control.

CONDITIONS: In a MEDEVAC-configured helicopter, while en route to the hospital or at the scene, and given a must radio, a cellular phone, or an FM radio.

STANDARDS: Using correct radio procedures, contact medical control, relay only essential patient information receive emergency room physician's orders, carry out orders expeditiously, and give an arrival time.

DESCRIPTION: Use the procedures below to relay patient information by mast radio, cellular phone, or FM radio.

a. Mast radio.

(1) Rotate the ICS selector switch to the appropriate position upon the pilot's command.

(2) Listen to ensure that the net is clear.

(3) Have the pilot dial medical control on the keypad, if needed.

(4) Relay patient information, and give the ETA.

(5) Receive orders from medical control.

(6) Carry out medical control orders.

(7) Advise medical control of changes en route.

(8) Clear the net once the transmission is complete.

b. Cellular phone.

NOTE: This phone is for ground use only.

(1) Attach the antennae.

(2) Pick up the receiver.

(3) Turn on the power, and wait for the phone to signal "Ready."

(4) Dial the desired phone number, and press "Send."

(5) When the second party picks up the receiver, relay the information.

c. FM radio.

(1) Listen to ensure that the net is clear.

(2) Rotate the ICS selector switch to the appropriate position.

(3) Relay patient information, and give the ETA.

(4) Carry out medical control instructions.

(5) Advise medical control of changes.

(6) Clear the net when the transmission is complete.

REFERENCE:

Unit SOP

TASK 2127

TASK: Complete an emergency medical report.

CONDITIONS: In a MEDEVAC-configured helicopter and given an EMS run sheet and a medical emergency.

STANDARDS: Correctly complete the run sheet according to state requirements, ensuring that all applicable blocks are filled in.

DESCRIPTION:

1. Record the appropriate data such as the date, time, and vehicle ID.

2. Record all patient identification information.

3. Record patient's chief complaint and medical history.

4. Record patient's status (primary and secondary survey results).

5. Record all treatment given.

6. Monitor and record all vital signs.

7. Record all en route changes in patient status.

8. Leave yellow button copy with patient at the receiving medical treatment facility.

9. Refer to term explanations on the reverse side of the form.

10. Attach the original copy to after-action reports.

REFERENCES:

Applicable state law on EMS

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. Tasks in this chapter will only be performed when a qualified and current MP/ME is occupying a flight crew station. If discrepancies are found between this chapter and TM 55-1520-242-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 those for the tasks listed in Chapter 5 (Figure 5-5).

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 the 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*, P, PC, and CE. The MP will be the PC in all task descriptions. Unless otherwise noted, the MP will perform P* duties in all tasks from the pilot station.

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. An example of an individual action is the completion of the engine-start and run-up checks by the P* and P for their designated seat positions.

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 2300

TASK: Perform prior-to-maintenance-test-flight checks.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-210-10 and TM 55-1520-210-CL and DA Form 2408-12 (Army Aviator's Flight Record) and DA Form 2408-13 (Aircraft Status Information Record).

STANDARDS:

1. Without error, perform the preflight inspection according to TM 55-1520-210-10 or TM 55-1520-210-CL.

2. Correctly enter appropriate information on DA Forms 2408-12 and 2408-13.

3. Correctly use the oral call-out and confirmation method.

4. Correctly check and perform all items in sequence.

5. Correctly determine aircraft suitability for flight.

6. Correctly determine the maneuvers, checks, and tasks required during the test flight.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will ensure that the preflight inspection is conducted according to TM 55-1520-210-10 or TM 55-1520-210-CL. He may direct that crew members inspect all or designated sections of the aircraft. The PC will verify that all preflight checks have been completed. He will ensure that the appropriate information is entered on DA Forms 2408-12 and 2408-13.

2. Crew members will complete the preflight inspection as directed and report to the PC whether the aircraft or assigned sections meet required preflight inspection criteria.

3. The PC will determine the maneuvers or checks necessary for the maintenance test flight. The crew will use additional publications and references as necessary. The PC will brief the other crew members and any supporting ground crew members concerning operation around or on the helicopter. He will ensure that the ground communications capability is adequate. The PC

will stress any applicable safety considerations or procedures during the briefing.

4. The PC will ensure that a walk-around inspection is completed prior to flight.

REFERENCES:

Aircraft logbook
AR 95-1
AR 95-3
DA Pamphlet 738-751
TM 1-1500-328-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2302

TASK: Perform before-starting engine checks.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-210-CL or TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-210-CL or TM 55-1520-242-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew members will perform, at a minimum, all checks required for flight per TM 55-1520-210-10 or TM 55-1520-210-CL. The type of test flight to be performed (general/limited) will determine the detailed checks required.

2. Each crew member will complete and record the required checks pertaining to his assigned crew station according to TM 55-1520-242-MTF.

3. The aircrew and, if available, the ground crew will announce when their checks are completed.

REFERENCES:

AR 95-1
AR 95-3
TM 1-1500-328-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2305

TASK: Perform starting engine checks.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-210-CL or TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-210-CL or TM 55-1520-242-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will brief the P, CE, and other crew members, as required, to assist in completing the task. His briefing may vary depending on pilot preference maintenance performed, and crew experience. In his briefing, the PC will include, at a minimum, crew duties in an emergency. Crew members will complete the task, accomplishing all requirements of TM 55-1520-210-CL or TM 55-1520-242-MTF.

2. Each crew member will complete and record the required checks pertaining to his assigned crew station according to TM 55-1520-210-CL or TM 55-1520-242-MTF.

3. The P* will announce initiation of engine start.

4. The aircrew and, if available, the ground crew will clear the area around the aircraft prior to each engine start.

5. Before starting the engines, the crew will ensure that all appropriate internal and external lights are operational and properly set and tie-downs and covers are removed and secured.

REFERENCES:

AR 95-1
AR 95-3
TM 1-1500-328-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2322

TASK: Perform engine run-up checks.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-210-10, TM 55-1520-210-CL, or TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-210-10, TM 55-1520-210-CL, or TM 55-1520-242-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew members will perform, at a minimum, all checks required for flight per TM 55-1520-210-10 or TM 55-1520-210-CL. The type of test flight to be performed (general/limited) will determine the detailed checks required.

2. Each crew member will complete and record the required checks pertaining to his assigned crew station according to TM 55-1520-210-CL or TM 55-1520-242-MTF.

3. The aircrew and, if available, the ground crew will announce when their checks are completed.

REFERENCES:

TM 1-1500-328-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2334

TASK: Perform baseline or normal engine health indicator test.

CONDITIONS: In a UH-1. helicopter and given TM 55-1520-242-MTF or TM 55-2840-229-23-1.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF or TM 55-2840-229-23-1.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly complete the HIT Baseline Worksheet (this may be conducted orally).

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. The P* will assign duties to the P or CE while performing this check. The P* will position the helicopter heading into the wind. The aircrew will perform the procedure as outlined in TM 55-1520-242-MTF or TM 55-2840-229-23-1.

4. The P or CE will record the aircraft hours, free air temperature, and indicated exhaust gas temperature for the appropriate gas turbine speed. He will then compute the EGT difference and record it on the aircraft HIT log.

REFERENCES:

Engine HIT log
TM 55-1520-210-10
TM 55-1520-210-CL
TM 55-1520-242-MTF
TM 55-2840-229-23-1

TASK 2336

TASK: Perform before-takeoff checks.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. Each crew member will complete the required checks pertaining to his assigned crew station. The PC will ensure that the before-takeoff checks are completed according to TM 55-1520-242-MTF.

2. The P* will direct the P or CE to call out the before-takeoff checks per TM 55-1520-242-MTF.

3. The P or CE will call out the before-takeoff checks when directed.

REFERENCES:

AR 95-1
TM 55-1520-210-10
TM 55-1520-210-CL
TM 55-1520-242-MTF

TASK 2338

TASK: Perform takeoff-to-hover check.

CONDITIONS: In a UH-1 helicopter, given TM 55-1520-242-MTF, and with the before-takeoff checks completed.

STANDARDS:

1. Clear the area around the aircraft.

2. Determine proper cyclic, collective, and pedal control responses.

3. Establish a 5-foot hover, ±1 foot.

4. Correctly determine proper center of gravity.

5. Determine proper droop cam operation.

6. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

> **CAUTION**
>
> Any excessive control displacement during this maneuver will require a static rigging check prior to continuation of the flight.

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. The P* will announce his intent to bring the aircraft to a hover.

4. With the collective fully down, the P* will place the cyclic in the neutral position. He will then increase the collective with a smooth, positive pressure. He will apply

pressure to the pedals to maintain heading and coordinate the cyclic to achieve a vertical ascent. The P* will adjust the collective to maintain the desired altitude and check that the N2 speed remains constant within ±40 RPM. While the aircraft is hovering into the wind, he will ensure that the cyclic is nearly centered and the pedal position is normal.

5. The P or CE will remain focused primarily inside the aircraft. When clear of the parking area, the P or CE will check the area for indications of fuel and oil leaks.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2340

TASK: Perform torquemeter/power check.

CONDITIONS: In a UH-1 helicopter, with the hover check completed and PPC data available.

STANDARDS:

1. Clear the area around the aircraft.

2. Maintain aircraft heading into the wind.

3. Maintain a stabilized 5-foot hover, ±1 foot.

4. Correctly note the torque indication.

5. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. The P or CE will compare the indicated torque with the predicted torque and will advise the P* of the difference.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2342

TASK: Perform hovering turns check.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Maintain a stabilized 5-foot hover, ±1 foot.

4. Establish aircraft heading into the wind.

5. Correctly perform left and right turns of 90 degrees to either side of the wind direction, not to exceed a 90-degree rate of turn in four seconds.

6. Correctly determine aircraft controllability and tail rotor response.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instrumenta, providing obstacle clearance and performing other duties as directed.

3. The P* will apply pressure on the desired pedal to begin the turn. Using pressure and counterpressure on both pedals to maintain a constant rate of turn, he will note that excessive pedal pressures are not required and pedal positions are normal.

REFERENCES:

TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2344

TASK: Perform sideward hovering flight check.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Maintain a stabilized 5-foot hover, ±1 foot.

4. Maintain aircraft heading into the wind and the flight path perpendicular to the wind direction.

5. Correctly determine aircraft controllability and tail rotor response.

6. Maintain hover speed consistent with autorotational capabilities.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments providing obstacle clearance, and performing other duties as directed.

3. The P* will apply cyclic in the desired direction of flight, noting that no excessive inputs are required. After he neutralizes the cyclic, the aircraft should coast to a stabilized hover.

REFERENCES:

TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2345

TASK: Perform forward hovering flight check.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Maintain a stabilized 5-foot hover, ±1 foot.

4. Maintain aircraft heading into the wind, ±10 degrees.

5. Correctly determine aircraft controllability and tail rotor response.

6. Correctly accelerate forward to ETL.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments providing obstacle clearance, and performing other duties as directed.

3. The P* will apply sufficient forward cyclic to accelerate to ETL. He will note that no excessive control inputs are required and the aircraft responds normally.

REFERENCES:

FM 1-203
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2346

TASK: Perform pylon mount check.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Maintain a stabilized 5-foot hover, ±1 foot.

4. Maintain aircraft heading into the wind, ±10 degrees.

5. Correctly induce pylon rock.

6. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. The P* will move the cyclic fore and aft, not to exceed 2 to 3 inches, at a rate sufficient to induce pylon rock. He will then neutralize the cyclic and record the number of cycles (beats) required to dampen pylon rocking. Bumping must dampen out within five cycles (beats). The P* will note that no abnormal vibrations or engine surges occur. The hydraulic caution light must not illuminate.

4. The P or CE will advise the P* if the hydraulic caution light illuminates or the torquemeter fluctuates abnormally.

REFERENCES:

TM 55-1520-210-23 series
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2347

TASK: Perform engine response check.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around and above the aircraft.

3. Initiate the check from a 5-foot hovert ±1 foot.

4. Maintain aircraft heading into the wind, ±10 degrees.

5. Correctly determine engine response.

6. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around and above the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instrumenta, providing obstacle clearance, and performing other duties as directed.

3. The P* will make a positive application of collective pitch. The engine must respond smoothly and rapidly and not stall. If N2 droops during the collective application, N2 must recover prior to 50 feet AGL or before the P* reduces the collective.

4. The P or CE will advise the P* if N2 droop occurs. He will ensure that airframe and engine limitations are not exceeded.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2348

TASK: Perform power cylinder check.

CONDITIONS: In a UH-1 helicopter, with a properly briefed crew member in the left seat, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around arid above the aircraft.

3. Maintain a 15-foot hover, ±5 feet.

4. Maintain aircraft heading into the wind, ±10 degrees.

5. Maintain position over the starting point within a lo-foot radius.

6. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around and above the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. The P* will brief the P or CE on the emergency procedure for induced control lockup. After establishing a 15-foot hover, the P* will move the cyclic smoothly and progressively up 6 to 8 inches along a 45-degree line from the left rear to the right forward quadrant at least five strokes. The P* will note the proper operation of the right cyclic servo and ensure that the hydraulic pump will function normally when the controls are moved faster than a normal rate. He will check the left servo similarly by moving the cyclic from the right rear to the left forward quadrant at least five strokes. The P or CE will ensure that the hydraulic segment caution light does not illuminate.

4. The P or CE will be prepared to recycle the hydraulic control switch upon the command "Recycle" or to turn the hydraulics off upon the command “Hydraulics off" from the P.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2349

TASK: Perform low RPM hover check.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Maintain a stabilized 5-foot hover, ±1 foot.

4. Establish aircraft heading into the wind.

5. Correctly perform 45-degree left and right turns to either side of the wind direction.

6. Correctly determine aircraft controllability and tail rotor response.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. When the aircraft is stabilized at a 5-foot hover, the P* will slowly decrease the N2 to 6000 RPM with the governor increase/decrease switch. (If aircraft controllability or control responses become abnormal during RPM reduction the maneuver will be terminated and static control rigging will be checked.) The P* will check antitorque controllability by performing 45-degree hovering turns to the left and right of the initial heading. While the aircraft is stabilized at 6000 RPM and a 5-foot hover, he will ensure that no excessive lateral vibrations are evident. While maintaining a 5-foot altitude, the P* will then increase RPM to 6600 with the governor increase/decrease switch.

4. The P or CE will reset the low RPM warning switch on the command of the P*.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2350

TASK: Perform manual throttle operations, emergency governor mode check.

CONDITIONS: In a UH-1 helicopter, with the aircraft on a level surface heading into the wind, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Without error, perform the procedure to change the governor to the emergency mode according to the description below.

4. Maintain aircraft heading into the wind, ±10 degrees.

5. Maintain 6400 RPM, ±200.

6. Correctly establish a 5-foot hover, ±1 foot.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

CAUTION

To prevent overspeed, overtemperature, compressor stall, or engine failure, make smooth throttle and collective adjustments. Closely monitor N1, N2, and EGT.

NOTE: A fluctuation of the torquemeter my occur between 6300 and 6500 RPM as a result of the transient opening and closing of the bleed band; this is normal. If bleed band cycling cannot be controlled, the governor decrease switch may be depressed (beeped down) to eliminate the cycling effect.

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing obstacle clearance, and performing other duties as directed.

3. While the aircraft is on the ground with RPM stabilized at 6600 and the collective fully down, the P* will retard the throttle to the engine idle stop. After the engine stabilizes at engine idle RPM, the P* will move the governor control switch to the emergency position. He will note a decrease in engine RPM and proper operation of the caution light. The P* will adjust the throttle to 6400 RPM and bring the aircraft to a stabilized 5-foot hover by smoothly increasing the collective and adjusting the throttle to maintain 6400 RPM. He will apply cyclic and pedals as necessary to remain stationary and to maintain a constant heading. upon completion of the hover, the P* will land the aircraft by smoothly reducing the collective and adjusting the throttle to maintain 6400 RPM. After laning the aircraft, the P* will reduce the throttle to the engine idle position. After noting a decrease in engine RPM, the P* will move the governor control switch to the automatic position. After verifying that the N1 is stabilized at engine idle RPM, he will increase the throttle to the fully open position and verify the proper N2 RPM setting.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2351

TASK: Perform takeoff and climb checks.

CONDITIONS: In a UH-1 helicopter, in VMC, with the before-takeoff check completed and a 2-foot hover power torque recorded, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Clear the area around the aircraft.

3. Correctly perform VMC takeoff.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. All crew members will clear the area around the aircraft.

2. The P* will remain focused outside the aircraft throughout the maneuver to provide obstacle clearance. He will announce whether the takeoff is from the ground or from a hover and his intent to abort or alter the takeoff.

3. The PC will determine the direction of takeoff by analyzing the wind, the long axis of the takeoff area, and the lowest obstacles. The P or CE will select reference points to assist in maintaining the takeoff flight path. The P* will coordinate the cyclic and collective as necessary to attain a constant angle of climb that will ensure obstacle clearance. The P or CE will monitor power requirements and advise the P* if power limits are being approached. Without exceeding aircraft limitations, the P* will use the power necessary to clear obstacles. After clearing obstacles, he will smoothly adjust the flight controls to continue climbing to the test altitude.

REFERENCES:

FM 1-202
FM 1-203
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2352

TASK: Perform level-off checks.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Maintain predetermined altitude, ±100 feet.

3. Determine airspeed indicator accuracy using a 2-foot hover power torque.

4. Correctly record instrument readings and initiate a fuel consumption check.

5. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instrumenta, providing cloud clearances, and performing other duties as directed.

2. The P* will initiate a climb to the level-off altitude. Using the prerecorded 2-foot hover power torque, he will maintain a constant altitude and heading. After allowing the instruments to stabilize for one minute, the P* will note the airspeed indicators at 90/100 KIAS, ±5 KIAS. He will direct the P or CE to record the engine oil temperature and pressure, transmission oil temperature and pressure, exhaust gas temperature fuel quantity, and time.

3. At the direction of the P*, the P or CE will call out and record the appropriate items on the maintenance test flight check sheet.

REFERENCES:

TM 1-1500-328-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2353

TASK: Perform control rigging check.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Verify that force trim is on.

3. Establish an airspeed of 90/100 KIAS, ±5 KIAS.

4. Maintain indicated torque at 30 psi.

5. Maintain turn-and-slip needle and ball centered.

6. Correctly determine cyclic and pedal positions.

7. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances, and performing other duties as directed.

2. The P* will initiate a climb to the level-off altitude. using a 30-psi torque, he will establish an airspeed of 90/100 KIAS. With the aircraft in trim, the cyclic should be centered laterally and the right pedal will be 1 to 2 inches forward of the left. The force trim should hold the cyclic and pedals in position. The P* will ensure that the collective does not creep up or down.

3. At the direction of the P*, the P or CE will verify that the cyclic and pedal positions on the copilot's side are in the same configuration or position as those on the pilot's side.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2354

TASK: Perform autorotation RPM check.

CONDITIONS: In a UH-1 helicopter, in VMC, with a suitable landing area within gliding distance and positive communications established, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Establish an airspeed of 50/60 KIAS, +5, -0 KIAS.

3. Correctly perform autorotation entry procedures.

4. Correctly call out rotor RPM, torque, N1, and vibrations.

5. Correctly perform power recovery procedures prior to 500 feet AGL.

6. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances, and performing other duties as directed.

2. The P* will initiate a climb to his entry altitude. He will initiate autorotation by reducing the collective to the fully down position and retarding the throttle to the engine idle position. When he has established a stabilized autorotational descent, he will call out the main rotor RPM, torque, and N1 instrument readings. There should be no increase in vibrations, and some right pedal should be available. The P* will initiate a power recovery prior to descending below 500 feet AGL. He will smoothly increase the throttle to the fully open position and check that the engine and rotor RPM needles are joined. He will then increase collective to establish a positive rate of climb.

REFERENCES:

AR 95-1
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2355

TASK: Perform hydraulics-off check.

CONDITIONS: In a UH-1 helicopter, in VMC, with a properly briefed crew member in the left seat, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Establish an airspeed of 80 KIAS, ±10 KIAS.

3. Correctly determine aircraft controllability.

4. Correctly determine collective forces.

5. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the air-Craft. The P or CE will assist him by monitoring the aircraft systems and flight instnunents, providing cloud clearances, and performing other duties as directed.

2. The P* will instruct the P or CE to identify the hydraulic control switch. After the switch has been identified, the P or CE will place the switch in the OFF position when directed by the P*. The P or CE will verify that the appropriate caution lights have illuminated and then reset the master caution light.

3. The P* will check cyclic forces by making cyclic inputs to the left and right forward quadrants. The cyclic forces should be approximately equal. The P* will check the collective forces by reducing the collective to attain a 10 to 13 psi torque reading for metal blades (10 psi for composite blades). then increase the collective to attain a 33 to 35 psi torque reading for metal blades (40 psi for composite blades). (The pressure required to reduce and increase the collective should be approximately equal.) Throughout the maneuver, the p* will maintain the aircraft in trim with the antitorque pedals and ensure that all control forces are not excessive.

4. After checking the collective forces, the P* will adjust the collective to attain level flight and direct the P or CE to

return the hydraulic control switch to the ON position. The P or CE will announce that the HYD PRESSURE segment light is not illuminated.

5. The P or CE will be prepared to place the hydraulic control switch in the opposite position (ON or OFF) if a cyclic hardover occurs.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2357

TASK: Perform engine topping check.

CONDITIONS: In a UH-1 helicopter, in VMC, with a properly briefed crew member in the left seat, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly determine maximum (indicated) torque using the engine calibration factor (engine data plate torque).

3. Establish an airspeed of 70 KIAS, ±10 KIAS.

4. Correctly determine the topping altitude per the MTF manual .

5. Correctly analyze and record engine topping data.

6. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances, and performing other duties as directed.

2. The P* will initiate a climb to an altitude of 500 to 1,000 feet below the estimated, predetermined topping altitude. He will then increase the collective to the indicated maximum torque without exceeding N1 or EGT limitations. He will maintain this power setting until the N2 droops to 6400 RPM or until reaching a 10,000-foot pressure altitude. When the N2 droops to 6400 RPM, the P* will adjust the collective to maintain 6400 RPM and continue to climb to the next whole 1,000-foot altitude (or 10,000 PA). He will then call out the torque, N1, EGT, and altitude while maintaining 6400 RPM. The P or CE will record the torque, N1, EGT, and altitude. The P* will further increase the collective until the N2 droops to 6200 RPM, verifying that the N1 has not increased. He will then reduce the collective slowly and smoothly and descend to the topping altitude. He will maintain this altitude for one minute and then have the P or CE read and record the free air temperature.

NOTE 1: If 10,000 PA is reached prior to N2 droop or the topping altitude cannot be reached because of environmental conditions, the crew will perform a power performance check per TM 55-2840-229-23-1.

NOTE 2: Actual engine topping is not required during training and evaluation. The intent of this task is to demonstrate maneuver proficiency.

REFERENCES:

DA Pamphlet 738-751
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2359

TASK: Perform stabilizer bar check.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Establish an airspeed of 80 KIAS, ±10 KIAS.

3. Maintain predetermined altitude, ±100 feet.

4. Verify that the force trim is on.

5. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the air-Craft. The P or CE will assist him by monitoring the aircraft systems and flight instruments providing cloud clearances, and performing other duties as directed.

2. The P* performs the stabilizer bar check using one of the following methods:

a. **Method 1.** The P* will maintain level flight, depress the force trim release button on the cyclic grip, and apply lateral cyclic (left or right) to obtain a 10- to 20-degree angle of bank. When the angle of bank is established, simultaneously the P* will release the force trim button and note the number of seconds required for the angle of bank to increase. The stabilizer bar dampers should allow the full cyclic input to take effect at 5 seconds, ±1 second.

b. **Method 2.** The P* will establish and maintain a constant 10- to 20-degree angle of bank (left or right) for a minimum of 10 seconds. When the angle of bank is established, the P* will depress the force trim release button on the pilot's cyclic grip and apply lateral cyclic to level the rotor disk. After neutralizing the cyclic to level the rotor disk, simultaneously he will release the force trim button and note the number of seconds required for the angle of bank to begin increasing in the opposite direction. The stabilizer bar dampers should allow the full cyclic input to take effect at 5 seconds, ±1 second.

REFERENCES:

DA Pamphlet 738-751
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF
TM 55-2840-229-23 series

TASK 2361

TASK: Perform vibration analysis check.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly compute the Vne.

3. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances and performing other duties as directed.

2. The P* will maintain level flight starting at 70 KIAS and then increase the airspeed until a 1:1 vertical vibration becomes noticeable. He will have the P or CE record the airspeed. While maintaining that airspeed, the P* will reduce power to a 10-psi torque and begin a descent. The P* will note and have the P or CE record any change (increase/decrease) in the 1:1 vertical vibration levels experienced during the low-power descent. He will then adjust collective to reestablish level flight.

3. The P* will maintain level flight and increase airspeed slowly to the computed Vne in 10-knot increments (unless vibrations become severe). The P* will note the changes in 1:1 vertical vibration levels and have the P or CE record the airspeeds at which the vibrations become evident.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2363

TASK: Perform cyclic rigging check.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly compute the Vne.

3. Correctly measure the cyclic position.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances, and performing other duties as directed.

2. The P* will maintain level flight and accelerate to the computed Vne. He will ensure that a minimum clearance of 2 inches remains between the pilot's cyclic stick arid the instrument panel.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2365

TASK: Perform flight instrument checks.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances, and performing other duties as directed.

2. The P* will perform climbing and descending turns, while the P or CE records the operation of the flight instruments. The instruments checked are the attitude indicators altimeters, gyro compass indicators, vertical speed indicators, standby compass, turn-and-slip indicator, and clock. The P* also will note that the instrument panel does not vibrate excessively.

REFERENCES:

TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-242-MTF

TASK 2366

TASK: Perform communication and navigation equipment checks.

CONDITIONS: In a UH-1 helicopter, in VMC, and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly check installed navigation equipment.

3. Correctly check installed communication equipment.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft. The P or CE will assist him by monitoring the aircraft systems and flight instruments, providing cloud clearances, and performing other duties as directed.

2. The P* will check the operation of installed communication and navigation equipment per TM 55-1520-242-MTF, Section IV, or other appropriate manuals.

REFERENCES:

TM 11-1520-210-23
TM 55-1520-210-23 series
TM 55-1520-242-10
TM 55-1520-242-MTF

TASK 2369

TASK: Perform special/detailed procedures checks.

CONDITIONS: In a UH-1 helicopter, with equipment installed; or orally in a classroom environment; and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF; use additional publications as required.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. Crew members will check any special equipment installed in the aircraft.

2. Crew members will demonstrate knowledge of the system and published operational checks, charts, graphs, and work sheets.

NOTE 1: A complete check of all special/detailed procedures is not required for an evaluation.

NOTE 2: Selected checks may be performed orally.

REFERENCES:

AR 95-1
AR 95-3
TM 1-1500-328-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF

TASK 2370

TASK: Perform after-landing and engine shutdown checks.

CONDITIONS: In a UH-1 helicopter and given TM 55-1520-242-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-242-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine any malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. Each crew member will complete and record the required checks pertaining to his assigned crew station according to TM 55-1520-242-MTF.

2. The aircrew and, if available, the ground crew will announce when their checks are completed.

3. The PC will ensure that the postflight inspection is completed and the Test Flight Check Sheet and aircraft logbook are completed and signed.

REFERENCES:

Aircraft logbook
AR 95-1
AR 95-3
DA Pamphlet 738-751
TM 1-1500-328-23
TM 11-1520-210-23
TM 55-1520-210-10
TM 55-1520-210-23 series
TM 55-1520-210-CL
TM 55-1520-242-MTF

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 and the various evaluations. These evaluations consist of the commander's (records, proficiency, and no-notice), battle-rostered crew, NVD standardization postaccident, and medical evaluations. Flight evaluation is a primary means of assessing flight standardization and crew member proficiency.

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 his ability to exercise crew coordination in completing these tasks.

b. The guidelines for evaluating crew coordination are not based on objective criteria; for example, distance 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 complete a task successfully.

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 and meaningful method should be developed to pass this task back to the examinee effectively. 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 makes the evaluation meaningless. These 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 to provide constructive comments. These evaluators are the SPs, IPs, IEs, MEs, FIs, and SIs who assist the commander in administering the ATP.

(2) The method used to conduct the evaluation must be based on uniform and standard objectives. In addition, it 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 the 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. Any crew member affected by the evaluation needs to know what is being performed correctly and incorrectly and how improvements can be made.

i. The examinee will be evaluated on his ability to perform to the standards set forth in each required task being evaluated, regardless of whether he is performing duties as the P*, P, CE, or additional crew member.

8-2. GRADING CONSIDERATIONS

a. Oral Examination. The examinee must demonstrate a working knowledge and understanding of the subject areas presented. The evaluator will assess the examinee's knowledge during the oral examination and enter the appropriate grade on the maneuver/procedure grade slip.

b. Flight Evaluation. Performance standards are based on an ideal situation. Grading is based on meeting the minimum standards. The evaluator must consider deviations (high wind, turbulence, poor visibility) from the ideal during the evaluation. If other than ideal conditions exist, the evaluator must make the appropriate adjustments to the standards.

NOTE: During an evaluation, a task 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.

Section II. Evaluation Guidelines

8-3. CREW MEMBER AND CREW FLIGHT EVALUATION

This evaluation is conducted to determine the crew member's ability to perform appropriate duties. It is administered for initial designation to the assigned duty position, when required, and at periodic intervals per AR 95-1. The evaluation sequence consists of the four phases given below. The evaluator is the final authority on the amount. of time devoted to each phase. When the evaluation is administered to an evaluator or a unit trainer, the recommended procedure is for the evaluator to reverse roles with the examinee. When the evaluator uses this technique, the examinee must understand how the role-reversal will be conducted and when it will be in effect. Initial validation of an evaluator's qualifications at a new duty station will be conducted in the aircraft.

a. Phase l--Introduction. In this phase, the evaluator--

(1) Introduces himself to the examinee.

(2) Reviews the examinee's records to verify that the examinee meets all prerequisites for the rating.

(3) Ensures that the examinee has all the required equipment for the flight.

(4) 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: For unit trainers (UTs and NCTs), the evaluation will include special emphasis on the exaninee's performance in those areas in which unit trainer duties are performed. The evaluation should ensure that the examinee can safely and effectively perform unit trainer duties.

b. Phase 2--Oral Examination. The exaninee must have a working knowledge and understanding of all applicable topics in the respective subject areas below. It is not intended as an examination of his in-depth knowledge of maintenance, flight theory, or anatomy/physiology. 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 evaluator will also demonstrate an ability to instruct and evaluate any topic area. A unit trainer will demonstrate an ability to instruct topics in the areas in which he performs UT duties. Aerodynamics, tactical and mission tasks, and night tasks are not required for ME, MP, or instrument evaluations if they are completed during the pilot stardardization evaluation.

NOTE 1: As RCMs and NCMs progress from aviator or crew member duties and responsibilities up through IP/NCT to SP/SI duties and responsibilities, their technical knowledge and flight proficiency will be expected to increase accordingly. This also applies to MPs as they progress to MEs.

NOTE 2: Evaluators will ask questions that address specific items in each topic area. The exaninee should not be expected to answer questions with "laundry lists"; for example, "What are the 12 visual illusions?"

(1) Regulations and Duplications (ARs 95-1, 95-2, and 95-3; DA Pamphlet 738-751: DOD FLIP; TC 1-210; TM l-1500-328-23; and local SOPs and regulations). Topics in this subject area are--

(a) ATP requirements.

(b) SOP requirements.

(c) DOD flight information publications and maps.[1]

(d) VFR minimums and procedures.[1]

(e) IFR minimums and procedures.[1]

(f) Inadvertent IMC procedures/VHIRP.[1]

(g) Aviation life support equipment.

(h) Weight and balance requirements.

(i) Flight plan preparation and filing.[1]

(j) Test flight weather requirements.[2]

(k) Local airspace usage (test flight).[2]

(l) Publications required in the aircraft.

(m) Maintenance operational check requirements.[2]

(n) MTF requirements.[2]

(o) Forms and records.

(2) Operating limitations and restrictions (TM 55-1520-210-10). Topics in this subject area are--

(a) Aircraft systems limitations.[1]

(b) Rotor limitations.[1]

(c) Power limitations.[1]

---

[1]Denotes topics that pertain to rated crew members only.
[2]Denotes topics that pertain to MEs or MPs only.

(d) Engine limitations.[1]

(e) Pressure limitations.[1]

(f) Temperature limitations.[1]

(g) Loading limits.

(h) Airspeed limitations.[1]

(i) Maneuvering limits.[1]

(j) Environmental restrictions.[1]

(k) Performance chart interpretation.[1]

(3) Aircraft emergency procedures and malfunction analysis (TM 55-1520-210-10). Topics in this subject area are--

(a) Emergency terms and their definitions.

(b) Emergency exits and equipment.

(c) Engine malfunctions.[1]

(d) Rotor, transmission, and drive system malfunctions.[1]

(e) Chip detectors.[1]

(f) Fires.

(g) Fuel system malfunctions.[1]

(h) Hydraulic system malfunctions.[1]

(i) landing and ditching procedures.

(j) Flight control malfunctions.[1]

(k) Electrical system malfunctions.[1]

(l) Mission equipment.

(4) ME and MP system operations -- systems malfunction analysis and troubleshooting (TM 55-1520-210-23 series, TM 55-1520-210-10, TM 55-1520-242-MTF, and TM 55-2840-229-23 series). Topics in this subject area, which are for MEs and MPs only, are--

(a) Engine start.

(b) Instrument indications.

(c) Electrical system.

(d) Caution panel indications.

(e) Power plant.

(f) Engine performance check.

(g) Power train.

(h) Hydraulic system.

(i) Flight contrlos.

(j) Vibrations.

(k) Fuel system.

(1) Communication and navigation equipment.

(m) Turbine engine analysis check and power performance checks.

(n) Baseline HIT checks.

(o) Magnetic compass compensation.

(5) Aeromedical factors (AR 40-8, FM 1-301, and TC 1-204). Topics in this subject area are--

(a) Flight restrictions due to exogenous factors.

(b) Hypoxia.

(c) Self-imposed stresses.

(d) Middle ear discomfort.

(e) Spatial disorientation.

(6) Aerodynamics (FM 1-203 and TM 55-1520-210-10). Topics in this subject area are--

(a) Retreating blade stall.[1]

(b) Dynamic rollover.[1]

(c) Settling with power.[1]

(d) Dissymmetry of lift.[1]

(e) Translating tendency.[1]

(f) Airflow during a hover.[1]

(g) Transverse flow effect.[1]

(h) Total aerodynamic force.[1]

(i) Autorotational glide characteristics.[1]

(7) Tactical and mission tasks FMs 1-112, 1-116, 1-400, 1-402, 55-450-2, 55-450-3, 55-450-4, 55-450-5, and 90-4; TCs 1-201, 1-204, and 1-210; TM 55-1520-210-10: and unit SOP). Topics in this subject area are--

(a) Tactical reports.

(b) Terrain flight planning and safety.[1]

(c) Terrain analysis.[1]

(d) Navigational chart, map, and tactical overlay interpretation.[1]

(e) Actions on contact.

(f) Fratricide prevention.

(g) Aircraft survivability equipment.

(h) Evasive maneuvers.[1]

(i) Tactical reports.[1]

(j) Fire support.[1]

(k) Tactical formations.

(1) Downed aircraft procedures.

(m) Inadvertent IMC procedures/VHIRP.[1]

(n) Mission equipment.

(o) External load operations.

(P) Internal load operations.

(8) Night mission operation and deployment (TC 1-204 and TM 55-1520-210-10). Topics in this subject area are--

(a) Types of vision.

(b) Dark adaptation, night vision protection, and scan techniques.

(c) Distance estimation and depth perception.

(d) Visual illusions.

(e) Use of internal, supplemental, and external lights.

(f) Unaided night flight.

(g) Night vision limitations and techniques.

(h) Flight crew night and NVD requirements.

(i) NVD characteristics and operation.

(j) NVD limitations and techniques.

c. Phase 3 -- Flight Evaluation. This phase consists of a flight crew or passenger briefing, a preflight inspection, engine-start and run-up procedures, flight tasks, after-landing tasks, and engine shutdown procedures.

(1) Briefing. The evaluator will explain the flight evaluation procedure and tell the examinee which tasks he will perform. When evaluating an evaluator or a unit trainer, 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 (role reversal).

(2) Preflight inspection and run-up procedures. The evaluator will evaluate the examinee's use of TM 55-1520-210-CL and/or TM 55-1520-242-MTF. He will also 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 select for evaluation any other tasks listed on the task list established by the commander. An evaluator must demonstrate an ability to evaluate and instruct 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, check-points, weather, and other pertinent information.

(4) **After-landing task and engine shutdown procedures.** The evaluator will evaluate the examinee's use of TM 55-1520-210-CL and/or TM 55-1520-242-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 5051-2-R (Maintenance Test Flight Maneuvers Grade Slip (UH-1)).

(d) DA Form 5702-R (Maneuver/Procedure Grade Slip for UH-1 RCM).

(e) DA Form 5702-1-R (Maneuver/Procedure Grade Slip for UH-1 NCM).

(f) 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. COMMANDER'S EVALUATIONS

The requirements for commander's evaluations are established in TC 1-210. Additional guidance for the three evaluations is given below.

a. Records Evaluation. The commander or his designated representative conducts the records evaluation to determine a crew member's readiness level for placement into the aircrew training program. He uses the Flight Records Folder and/or Individual Aviation Training Folder to determine crew member currency and proficiency levels.

b. Proficiency Flight Evaluation.

(1) The commander directs the proficiency flight evaluation and administers it using the guidelines established in AR 95-1; TC 1-210, Chapter 2; and paragraph 8-3 above. This flight evaluation is conducted to determine--

(a) The individual's readiness level upon assignment to the unit.

(b) The individual's proficiency when his aircraft currency has lapsed per AR 95-3.

(c) The individual's proficiency when questioned by the commander.

(2) After the evaluation, the evaluator will debrief the individual and complete DA Forms 4507-R, 4507-2-R (if applicable), 5051-2-R (if applicable), 5702-R, 5702-1-R, and 7121-R per instructions in Chapter 9.

c. No-Notice Evaluation. The commander directs the no-notice evaluation and administers it using the guidelines in paragraph 8-3 above. This evaluation is used to determine the flight crew's and flight crew member's proficiency and to provide the commander with 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. The evaluator will debrief the examinee and complete DA Forms 4507-R, 4507-2-R (if applicable), 5051-2-R (if applicable), 5702-R, 5702-1-R, and 7121-R per instructions in Chapter 9.

8-5. BATTLE-ROSTERED CREW EVALUATION

a. Battle-rostered crew evaluation may be a continuous process during crew training. The evaluator must evaluate the crew's ability to perform all required tasks in the day mode and, if applicable, the night unaided or NVD mode.

b. Instructors and evaluators must evaluate the crew during a mission to ensure that crew members perform the tasks to standards. To observe a mission, the evaluator may use any combination of the methods given below, depending on assets and aircraft capabilities. These methods are--

(1) Observation from a crew or passenger seat.

(2) Observation from another aircraft.

c. Once the crew has demonstrated proficiency in all crew tasks, during the day and (if applicable) with the NVD, and the commander is satisfied that the crew has met all standards for each task, he will certify the crew as CRL 1. The evaluator will debrief the crew and use DA Form 7121-R provided at the back of this manual to record the evaluation results. Reproduce this form locally on 5 1/2- by 8-inch paper.

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 the CRL 1 requirements stated in TC 1-210.

8-6. ANNUAL NVD STANDARDIZATION FLIGHT EVALUATION

This evaluation is conducted per TC 1-210, this manual, 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), 5702-R, and 5702-1-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 aviator was performing at the time of the accident. Special emphasis should be placed on evaluating the task which was being performed at the time of the accident under similar conditions, if possible. After the evaluation, the IP or SP will debrief the examinee and complete DA Forms 4507-R, 4507-2-R (if applicable), 5051-2-R (if applicable), 5702-R, and 5702-1-R per instructions in Chapter 9.

8-8. MEDICAL FLIGHT EVALUATION

This evaluation is conducted per AR 95-1. The IP or SF, 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 examineets 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 the conditions under which he can perform.

b. The unit commander will then forward the memorandum and DA Forms 4507-R, 4507-2-R (if applicable), 5051-2-R (if applicable), 5702-R, and 5702-1-R to Commander, US Army Aviation Center, ATTN: HSXY-AER, Fort Rucker, AL 36362-5333.

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 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. Six 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 l/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 concerning evaluations or training. It consists of two pages and is identical for all Army aircraft or simulation devices. A sample of a completed DA Form 4507-R is in Figures 9-1 and 9-2 (pages 9-3 and 9-4). Instructions for completing the 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, APART or commander's evaluation. If training, write in refresher mission, or continuation.

(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 the applicable crew station(s). Enter LS for left seat and RS for right seat.

(5) Type of 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, or NVS.

c. Evaluator/Instructor Recommendations. Place an X in the appropriate blocks and circle applicable items; that is, issue orders or validate status. If the crew duty position is other than that shown, specify in the space provided. Use the comment slip on the back to explain unsatisfactory performance referencing the appropriate maneuver or procedure number from DA Form 5702-R, 5702-1-R, or 5051-2-R. Recommended additional training also may be listed on the back, 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 the considerations below. 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 trainee or examinee 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	JONES, BOBBY J.	CW2	479-62-9988
	UNIT: A CO, 4-101 AVN REGT FORT CAMPBELL, KY	BIRTH MONTH: FEB	
EVALUATOR/ INSTRUCTOR	NAME: SHIRLEY, ROBERT A.	RANK: CW3	SSN: 512-32-1456
	UNIT: A CO, 4-101 AVN REGT, FORT CAMPBELL, KY		

FLIGHT TIME DATA

TOTAL HOURS (FW): | TOTAL HOURS (RW): 1425

PURPOSE: (EVALUATION) TRAINING (SPECIFY) APART

TIME TODAY: 2.5 | CUMULATIVE TIME: | SEAT: RS

TYPE AIRCRAFT: UH-1

		PI	PC	UT	IP	SP	IE	MP	ME	CE
	CONTACT									
X	INSTRUMENT		X							
	NVG/NVS									
	TACTICS									
	GUNNERY									
	OTHER									

DAY	NIGHT	HOOD	WX	SIMULATOR	NVG	NVS
.5			2.0			

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: Robert A. Shirley

I HAVE BEEN DEBRIEFED BY THE EVALUATOR OR INSTRUCTOR AND UNDERSTAND MY CURRENT STATUS.

EXAMINEE'S OR TRAINEE'S SIGNATURE: Bobby J. Jones

OVERALL GRADE FOR THIS FLIGHT IS: (S) U NA | DATE: 15 FEB 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 WAS A SATISFACTORY INSTRUMENT EVALUATION. ALL MANEUVERS WERE PERFORMED IN A SAFE MANNER.

Bobby J. Jones Robert A. Shirley
CW3 SP

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. A sample of a completed DA Form 4507-2-R is in Figures 9-3 and 9-4 (pages 9-6 and 9-7). When completing this form, use the applicable portions of the procedures in paragraph 9-1c. When all forms have been completed, staple them together.

9-3. DA FORM 5702-R (MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 RCM) AND DA FORM 5702-1-R (MANEUVER/PROCEDURE GRADE SLIP FOR UH-l NCM)

These forms, which consist of two pages each, list 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 5702-R. Figures 9-7 and 9-8 (pages 9-10 and 9-11) show a sample of a completed DA Form 5702-1-R. The evaluator or instructor should carry these forms during the evaluation or training flight. Instructions for completing these forms 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 applicable grade (GR) block for each maneuver or procedure trained or evaluated to indicate the proficiency level of the examinee or trainee.

c. Enter D in the GR block if the task is demonstrated only and the crew member is unable to practice it for some reason.

d. Place a diagonal in the GR block for all maneuvers or procedures not trained or evaluated. Another 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.

NOTE: Tasks with circles are mandatory for standardization flight evaluations; with squares, for instrument flight evaluations; and with diamonds, for NVG standardization flight evaluations. Tasks with (CE) after their titles are for maintenance personnel only, and tasks with (MO) after their titles are for medical personnel only.

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.

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: JONES, BOBBY J Date: 15 Feb 92

THIS FORM IS USED TO CONTINUE COMMENTS FROM THE BACK OF DA FORM 4507-R.

Bobby J. Jones Robert A. Shirley
CW3 SP

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.

Bobby J. Jones Robert A. Shirley
CW3 SP

PAGE 2, DA FORM 4507-2-R, MAY 87

Figure 9-4. Sample of a completed DA Form 4507-2-R (back)

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 RCM

For use of this form, see TC 1-211; the proponent agency is TRADOC.

Examinee's/Trainee's Name JONES, BOBBY J. **Date** 15Feb92

Instructor or evaluator will sign in the first unused block.

NO	MANEUVER/PROCEDURE	GR	NO	MANEUVER/PROCEDURE	GR
1	CREW MISSION BRIEFING	S	23	SIMULATED ENGINE FAILURE AT HOVER	S
2	VFR FLIGHT PLANNING		24	SIMULATED ENGINE FAILURE AT ALTITUDE	S
3	IFR FLIGHT PLANNING	S	25	MANUAL THROTTLE OPERATION, EMER GOVERNOR MODE	S
4	DD FORM 365-4		26	EMERGENCY PROCEDURES	S
5	DA FORM 7243-R	S	27	HAND AND ARM SIGNALS	S
6	PREFLIGHT INSPECTION	S	28	INSTRUMENT TAKEOFF	
7	BEFORE-STARTING ENGINE THROUGH ENGINE SHUTDOWN	S	29	RADIO NAVIGATION	
8	ALSE OPERATION	S	30	HOLDING PROCEDURES	
9	HOVER POWER CHECK	S	31	UNUSUAL ATTITUDE RECOVERY	
10	HOVERING FLIGHT	S	32	RADIO COMMUNICATION PROCEDURES	
11	VMC TAKEOFF	S	33	TWO-WAY RADIO FAILURE PROCEDURES	
12	SIMULATED MAXIMUM PERFORMANCE TAKEOFF		34	NONPRECISION APPROACH	
13	TRAFFIC PATTERN FLIGHT	S	35	PRECISION APPROACH	
14	FUEL MANAGEMENT PROCEDURES	S	36	INADVERTENT IMC PROCEDURES/VHIRP	S
15	PILOTAGE AND DEAD RECKONING		37	AIRCRAFT SURVIVABILITY EQUIPMENT	S
16	VMC APPROACH	S	38	MARK XII IFF SYSTEM	
17	SHALLOW APPROACH TO RUNNING LANDING	S	39	PINNACLE OR RIDGELINE OPERATION	
18	CONFINED AREA OPERATIONS		40	FM RADIO HOMING	
19	SLOPE OPERATIONS		41	AERIAL OBSERVATION	
20	HOVER OGE CHECK		42	EVASIVE MANEUVERS	
21	POSTFLIGHT INSPECTION	S	43	MULTIAIRCRAFT OPERATIONS	
22	HOVERING AUTOROTATION	S	44	RAPPELLING PROCEDURES	

DA FORM 5702-R, NOV 92 EDITION OF SEP 88 IS OBSOLETE

Figure 9-5. Sample of a completed DA Form 5702-R (front)

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 RCM

NO	MANEUVER/PROCEDURE	GR	NO	MANEUVER/PROCEDURE	GR
45	INTERNAL RESCUE-HOIST OPERATIONS		67	TERRAIN FLIGHT DECELERATION	S
46	AERIAL MINE DELIVERY		68	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION	
47	PARADROP OPERATIONS		69	TACTICAL COMMUNICATION PROCEDURES AND ECCM	
48	STABILITY OPERATIONS		70	TACTICAL REPORT	S
49	EXTERNAL LOAD OPERATIONS		71	STANDARD AUTOROTATION WITH TURN	
50	INTERNAL LOAD OPERATIONS		72	SIMULATED HYDRAULIC SYSTEM MALFUNCTION	
51	LZ OR PZ RECON AND RECOMMENDATION		73	ORAL EVALUATION	S
52	ROUTE RECONNAISSANCE		74	Robert A. Shirley	
53	CALLING FOR/ADJUSTING INDIRECT FIRE		75		
54	AERIAL RADIO RELAY	S	76		
55	ACTIONS ON CONTACT		77		
56	ZONE RECONNAISSANCE		78		
57	AREA RECONNAISSANCE		79		
58	STANDARD AUTOROTATION		80		
59	LOW-LEVEL AUTOROTATION		81		
60	SIMULATED ANTITORQUE MALFUNCTION (FPS)		82		
◇61	TERRAIN FLIGHT MISSION PLANNING		83		
◇62	TERRAIN FLIGHT NAVIGATION		84		
◇63	TERRAIN FLIGHT		85		
64	TECHNIQUES OF MOVEMENT		86		
65	WIRE OBSTACLES		87		
66	MASKING AND UNMASKING		88		

REVERSE, DA FORM 5702-R, NOV 92

Figure 9-6. Sample of a completed DA Form 5702-R (back)

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 NCM

For use of this form, see TC 1-211; the proponent agency is TRADOC.

Examinee's/Trainee's Name HARRIS, MARK N. **Date** 15 Feb 92

Instructor or evaluator will sign in the first unused block.

NO	MANEUVER/PROCEDURE	GR	NO	MANEUVER/PROCEDURE	GR
①	PREFLIGHT INSPECTION (CE)	S	㉓	EMERGENCY EGRESS	S
②	PREVENTIVE MAINTENANCE SERVICE (CE)	S	㉔	EMERGENCY PROCEDURES	S
③	BEFORE-STARTING ENGINE THROUGH ENGINE SHUTDOWN	S	㉕	HAND AND ARM SIGNALS	S
④	ALSE OPERATION	S	㉖	FUEL SAMPLE	S
⑤	AIRSPACE SURVEILLANCE	S	㉗	PASSENGER BRIEFING	S
⑥	HOVER POWER CHECK	S	㉘	INADVERTENT IMC PROCEDURES/VHIRP	S
⑦	HOVERING FLIGHT	S	㉙	AIRCRAFT SURVIVABILITY EQUIPMENT	S
⑧	VMC TAKEOFF	S	㉚	MARK XII IFF SYSTEM	S
9	SIMULATED MAXIMUM PERFORMANCE TAKEOFF		㉛	LOADING, SECURING, AND UNLOADING PATIENTS (MO)	
⑩	TRAFFIC PATTERN FLIGHT	S	㉜	CPR (MO)	
11	PILOTAGE AND DEAD RECKONING		㉝	VITAL SIGNS IN FLIGHT (MO)	
⑫	VMC APPROACH	S	㉞	TRIAGE (MO)	
⑬	SHALLOW APPROACH TO RUNNING LANDING	S	㉟	PATIENT WITH CHEST/HEAD INJURIES (MO)	
⑭	CONFINED AREA OPERATIONS	S	㊱	OXYGEN THERAPY WITH NASAL CATHETER (MO)	
⑮	SLOPE OPERATIONS	S	㊲	OXYGEN BY MASK (MO)	
⑯	HOVER OGE CHECK	S	㊳	INTRAVENOUS INFUSION (MO)	
⑰	AIRCRAFT REFUELING	S	㊴	MANUAL VENTILATION BY BAG-MASK (MO)	
⑱	POSTFLIGHT INSPECTION (CE)	S	㊵	PREFLIGHT INSPECTION OF MEDICAL EQUIPMENT (MO)	
19	HOVERING AUTOROTATION		41	PINNACLE OR RIDGELINE OPERATION	S
20	SIMULATED ENGINE FAILURE AT HOVER		42	FM RADIO HOMING	
21	SIMULATED ENGINE FAILURE AT ALTITUDE		43	AERIAL OBSERVATION	
22	MANUAL THROTTLE OPERATION, EMER GOVERNOR MODE		44	EVASIVE MANEUVERS	

DA FORM 5702-1-R, NOV 92

Figure 9-7. Sample of a completed DA Form 5702-1-R (front)

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 NCM

NO	MANEUVER/PROCEDURE	GR	NO	MANEUVER/PROCEDURE	GR
45	MULTIAIRCRAFT OPERATIONS		67	TECHNIQUES OF MOVEMENT	
46	RAPPELLING PROCEDURES		68	WIRE OBSTACLES	
47	INTERNAL RESCUE-HOIST OPERATIONS		69	MASKING AND UNMASKING	
48	AERIAL MINE DELIVERY		70	TERRAIN FLIGHT DECELERATION	
49	PARADROP OPERATIONS		71	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION	
50	STABILITY OPERATIONS		72	TACTICAL COMMUNICATION PROCEDURES AND ECCM	
51	EXTERNAL LOAD OPERATIONS		73	STANDARD AUTOROTATION WITH TURN	
52	INTERNAL LOAD OPERATIONS		74	SIMULATED HYDRAULIC SYSTEM MALFUNCTION	
53	LZ OR PZ RECON AND RECOMMENDATION		75	PATIENT PREPARATION FOR HOIST OPERATION (MO)	
54	ROUTE RECONNAISSANCE		76	MEDICAL ANTISHOCK TROUSERS (MO)	
55	CALLING FOR/ADJUSTING INDIRECT FIRE		77	PORTABLE SUCTION APPARATUS (MO)	
56	AERIAL RADIO RELAY		78	PATIENT RESTRAINT (MO)	
57	ACTIONS ON CONTACT		79	EMERGENCY DELIVERY (MO)	
58	AIRCRAFT PREPARATION FOR MISSION		80	PORTABLE HEART RATE MONITOR (MO)	
59	ZONE RECONNAISSANCE		81	RELAYING OF PATIENT INFORMATION (MO)	
60	AREA RECONNAISSANCE		82	MEDICAL REPORT (MO)	
61	STANDARD AUTOROTATION		83	ORAL EVALUATION	S
62	LOW-LEVEL AUTOROTATION		84	Robert A. Shirley	
63	SIMULATED ANTITORQUE MALFUNCTION (FPS)		85		
◇64	TERRAIN FLIGHT MISSION PLANNING		86		
◇65	TERRAIN FLIGHT NAVIGATION		87		
◇66	TERRAIN FLIGHT		88		

REVERSE, DA FORM 5702-1-R, NOV 92

Figure 9-8. Sample of a completed DA Form 5702-1-R (back)

9-4. DA FORM 5051-2-R (MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (UH-l))

This maneuvers grade slip provides a record of evaluation and training conducted at the unit level. It addresses those tasks and procedures required in the performance of maintenance test flights. DA Form 5051-2-R is an important tool in attaining standardization and quality control. It should be filled out correctly and legibly. The instructor or evaluator should carry the grade slip during the evaluation or training flight. Figure 9-9 shows a sample of a completed DA Form 5051-2-R. 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 applicable GR block for each maneuver or procedure trained or evaluated to indicate the proficiency level of the examinee or trainee.

c. Enter D in the GR block if the task is demonstrated only and the aviator is unable to practice it for some reason.

d. Place a diagonal in the GR block for all maneuvers or procedures not trained or evaluated. Another 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 (UH-1)

For use of this form, see TC 1-211; the proponent agency is TRADOC.

Examinee's/Trainee's Name MERLIN, WILLIAM B. **Date** 10 JUN 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	STARTING ENGINE CHECKS	S
4	ENGINE RUN-UP CHECKS	S
5	BASELINE OR NORMAL ENGINE HIT	S
6	BEFORE-TAKEOFF CHECKS	S
7	TAKEOFF-TO-HOVER CHECK	S
8	TORQUEMETER/POWER CHECK	S
9	HOVERING TURNS CHECK	S
10	SIDEWARD HOVERING FLIGHT CHECK	S
11	FORWARD HOVERING FLIGHT CHECK	S
12	PYLON MOUNT CHECK	S
13	ENGINE RESPONSE CHECK	S
14	POWER CYLINDER CHECK	S
15	LOW RPM HOVER CHECK	S
16	MANUAL THROTTLE OPERATIONS, EMERGENCY GOVERNOR MODE CHECK	S
17	TAKEOFF AND CLIMB CHECKS	S
18	LEVEL-OFF CHECKS	S
19	CONTROL RIGGING CHECK	
20	AUTOROTATION RPM CHECK	
21	HYDRAULICS-OFF CHECK	
22	ENGINE TOPPING CHECK	
23	STABILIZER BAR CHECK	S
24	VIBRATION ANALYSIS CHECK	S
25	CYCLIC RIGGING CHECK	S
26	FLIGHT INSTRUMENT CHECKS	S
27	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	S
28	SPECIAL/DETAILED PROCEDURES CHECKS	S
29	AFTER-LANDING AND ENGINE SHUTDOWN CHECKS	S
30	ORAL EVALUATION	S
31	Fred T. Jones	
32		
33		
34		
35		
36		
37		
38		
39		
40		

NOTE: ITEMS 31 THROUGH 40 INTENTIONALLY LEFT BLANK FOR LATER USE.

DA FORM 5051-2-R, NOV 92 EDITION OF JULY 90 IS OBSOLETE

Figure 9-9. Sample of a completed DA Form 5051-2-R

9-5. DA FORM 7121-R (BATTLE-ROSTERED CREW EVALUATION/TRAINING GRADE SLIP)

This form is used to record information concerning battle-rostered crew evaluations and training. It consists of two pages and is identical for all Army aircraft or simulation devices. Figures 9-10 and 9-11 (pages 9-16 and 9-17) show a sample of a completed DA Form 7121-R. Instructions for completing the 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 NCMs in the space provided. Then enter the unit of the crew. The 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, place an S or a 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, or 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 crew tasks may have been 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.

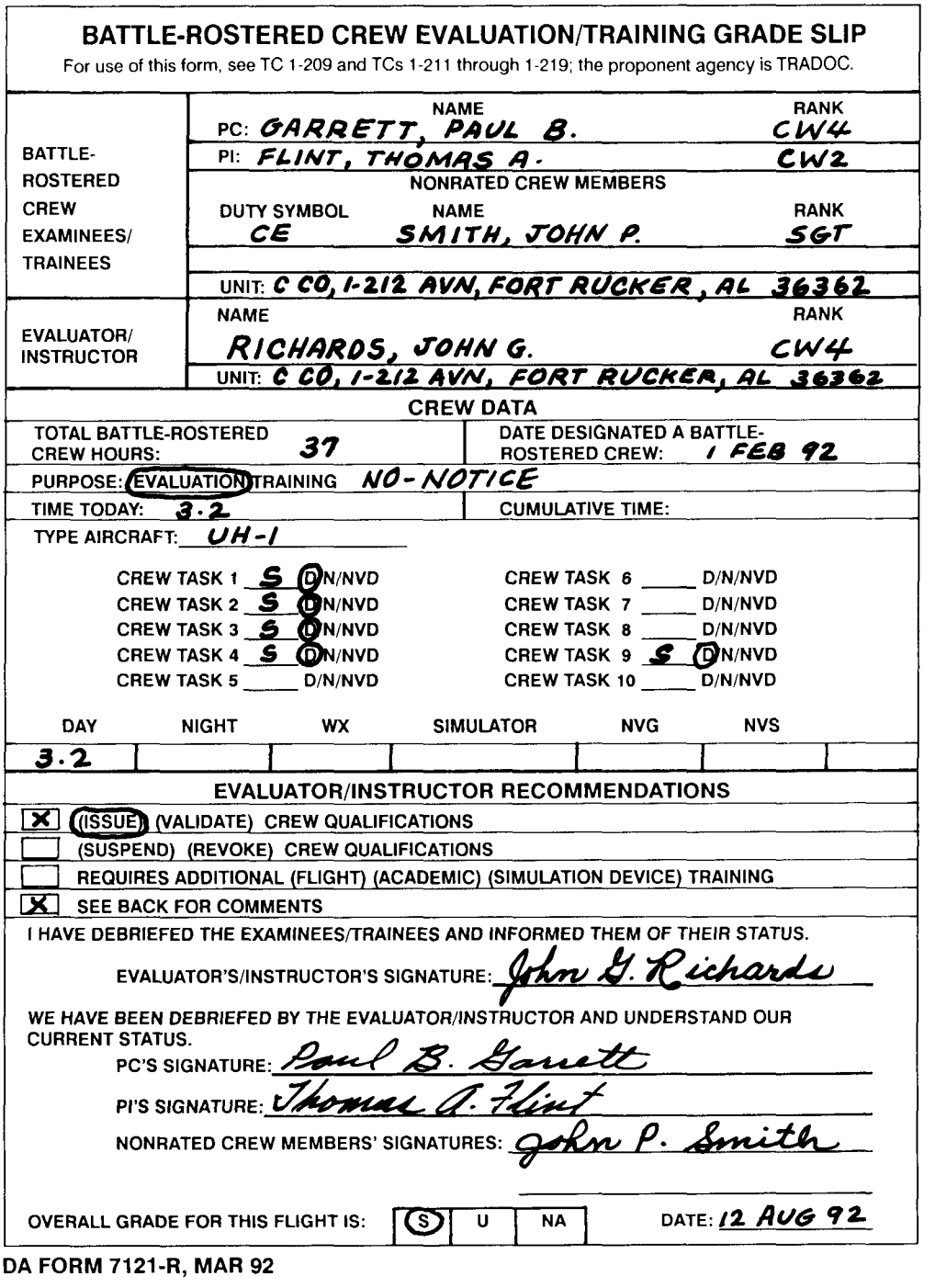
(3) Obtain the PC's, PI's, and NCM's signatures on the front of the form and beside your signature after the comments on the back. (By signing the form, the crew acknowledges that they have been debriefed. Their signatures do not mean that they concur or nonconcur with the results.)

(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, all unsatisfactory grade (U) for an individual crew member will not result in an overall grade of unsatisfactory for the crew.

(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: GARRETT, PAUL B.	CW4
	PI: FLINT, THOMAS A.	CW2
	NONRATED CREW MEMBERS	
	DUTY SYMBOL: CE — NAME: SMITH, JOHN P.	RANK: SGT
	UNIT: C CO, 1-212 AVN, FORT RUCKER, AL 36362	
EVALUATOR/ INSTRUCTOR	NAME: RICHARDS, JOHN G.	RANK: CW4
	UNIT: C CO, 1-212 AVN, FORT RUCKER, AL 36362	

CREW DATA

TOTAL BATTLE-ROSTERED CREW HOURS: 37	DATE DESIGNATED A BATTLE-ROSTERED CREW: 1 FEB 92
PURPOSE: (EVALUATION) TRAINING NO-NOTICE	
TIME TODAY: 3.2	CUMULATIVE TIME:

TYPE AIRCRAFT: UH-1

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	____ D/N/NVD
CREW TASK 4	(S) D/N/NVD	CREW TASK 9	(S) D/N/NVD
CREW TASK 5	____ D/N/NVD	CREW TASK 10	____ D/N/NVD

DAY	NIGHT	WX	SIMULATOR	NVG	NVS	
3.2						

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: John G. Richards

WE HAVE BEEN DEBRIEFED BY THE EVALUATOR/INSTRUCTOR AND UNDERSTAND OUR CURRENT STATUS.

PC'S SIGNATURE: Paul B. Garrett

PI'S SIGNATURE: Thomas A. Flint

NONRATED CREW MEMBERS' SIGNATURES: John P. Smith

OVERALL GRADE FOR THIS FLIGHT IS: (S) | U | NA — DATE: 12 AUG 92

DA FORM 7121-R, MAR 92

Figure 9-10. Sample of a completed DA Form 7121-R (front)

COMMENTS

THIS WAS A SATISFACTORY FLIGHT. ALL CREW TASKS WERE PERFORMED IN A SAFE MANNER.
Paul B. Garrett — John G. Richards CW4 SP
Thomas A. Flint
John P. Smith

PAGE 2, DA FORM 7121-R, MAR 92

Figure 9-11. Sample of a completed DA Form 7121-R (back)

GLOSSARY

ADF	automatic direction finder
AGL	above ground level
AH	attack helicopter
AHO	above highest obstacle
AIM	Airman's Information Manual
ALSE	aviation life support equipment
AMBU	(company trade name for resuscitation bag)
AMC	air mission commander
ammo	ammunition
ANVIS	aviatorts night vision imaging system
APART	annual proficiency and readiness test
AR	Army regulation
ARNG	Army National Guard
ARTEP	Army Training and Evaluation Program
ASE	aircraft survivability equipment.
ASET	aircrew survivability equipment trainer
ASR	airport surveillance radar
ATC	air traffic control
ATM	aircrew training manual
ATP	aircrew training program
ATTN	attention
avail	available
avn	aviation
BP	blood pressure
BVMR	bag-valve mask resuscitator
cal	calibration
CDI	course deviation indicator
CE	crew chief
CG	center of gravity
CL	checklist
co	company
CONUS	continental United States
CPR	cardiopulmonary resuscitation
CPU	central processing unit
CRL	crew readiness level
D	day; demonstrated (for grade slip purposes)
DA	Department of the Army
DCM	directional control margin
DD	Department of Defense
DH	decision height
DOD	Department of Defense
DOES	Directorate of Evaluation and Standardization

ECCM	electronic counter-countemeasures
EGT	exhaust gas temperature
EH	electronic helicopter
EKG	electrocardiogram
EMER	emergency
EMS	emergency medical service
end	endurance
EOA	esophageal obturator airway
equip	equipment
ETA	estimated time of arrival
ETE	estimated time en route
ETL	effective translational lift
ETP	exportable training packet
FAA	Federal Aviation Administration
FAC	flight activity category
FAR	Federal Aviation regulation
FAT	free air temperature
FI	flight engineer instructor
FIH	Flight Information Handbook
FLIP	flight information publication
flt	flight
FM	field manual; freqency modulated
FPM	feet per minute
FPS	fixed pedal setting
FS	flight simulator
FW	fixed wing
GR	grade
GWT	gross weight
HIT	health indicator test
HQ	headquarters
HYD	hydraulic
I	instructor
IAS	indicated airspeed
ICAO	International Civil Aviation Organization
ICS	intercommunication 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
ind	indicated
IP	instructor pilot
IPPV	intermittent positive pressure ventilation
IV	intravenous

KERLIX	(company trade name for clean gauze)
KIAS	knots indicated airspeed
LOC	localizer
LS	left seat
LZ	landing zone
MAP	missed approach point
MAST	medical antishock trousers
max	maximum
ME	maintenance test flight evaluator
MED	medical
MEDEVAC	medical evacuation
METL	mission essential task list
METT-T	mission, enemy, terrain, troops, and time available
MIJI	meaconing, intrusion, jamming, and interference
MO	flight surgeon or other medical personnel
MOPP	mission-oriented protective posture
MOS	military occupational specialty
MP	maintenance test pilot
MTF	maintenance test flight
N	night
N1	gas turbine speed
N2	power turbine speed
NA	not applicable; ungraded (for grade slip purposes)
NAS	National Airspace System
NATO	North Atlantic Treaty Organization
NAVAID	navigational aid
NBC	nuclear, biological, chemical
NCM	nonrated crew member
NCT	nonrated crew trainer
NDB	nondirectional beacon
NGR	National Guard regulation
no	number
NOE	nap of the earth
NOTAM	notice to airmen
NVD	night vision device
NVG	night vision goggles
NVS	night vision systems
OGE	out-of-ground effect
OH	observation helicopter
OR	door gunner
P	pilot not on the controls
P*	pilot on the controls
PA	pressure altitude
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
PPC	performance planning card
PPH	pounds per hour
psi	pounds per square inch
pub	publication
PZ	pickup zone
qty	quantity
R	reproducible
R/C	rate of climb
RCM	rated crew member
recon	reconnaissance
regt	regiment
RL	readiness level
RMI	remote magnetic indicator
RPM	revolutions per minute
rqr	requirement
RS	right seat
RW	rotary wing
S	satisfactory (for grade slip purposes)
SALUTE	size, activity, location, unit, time, equipment
SAM	send a message
SFTS	synthetic flight training systems
SI	standardization flight engineer instructor
SIF	selective identification feature
SKED	(company trade name for litter)
SM	statute mile
SM/TG	soldier's manual/trainer's guide
SOI	signal operation instructions
SOP	standing operating procedure
SP	standardization instructor pilot
SSN	social security number
STABO	stability operations
STANAG	standardization agreement
std	standard
STP	soldier training publication
TB	technical bulletin
TC	training circular
TM	technical manual
TRADOC	United States Army Training and Doctrine Command
trq	torque

U	unsatisfactory (for grade slip purposes)
UH	utility helicopter
UH1FS	UH-1 flight simulator
US	United States (of America)
USAALS	United States Army Aviation Logistics School
USAAVNC	United States Army Aviation Center
USAF	United States Air Force
USAR	United States Army Reserve
UT	unit trainer
VFR	visual flight rules
VHF	very high frequency
VHIRP	vertical helicopter instrument recovery procedures
VMC	visual meteorological conditions
Vne	velocity never exceed (airspeed limit)
VOR	VHF omnidirectional range
VSI	vertical speed indicator
WX	weather

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DA Form 7121-R. Battle-Rostered Crew Evaluation/Training Grade slip. March 1992.

Department of the Army Pamphlet

*DA Pamphlet 738-751. Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A). 15 January 1988.

Department of Defense Flight Information publications

Army Aviation Flight Information Bulletin
Flight Information Handbook

DOD flight information publications are available from Director, US Army Aeroriautical Services Agency, ATTN: MOAS-AI, Cameron Station, Alexandria, VA 22304-5050.

Department of Defense Forms

DD Form 175. Military Flight Plan. May 1986.
DD Form 365-4. Weight and Balance Clearance Form - Tactical/ Transport. April 1989.

Federal Aviation Administration Publication

Airman's Information Manual.

The AIM is available from Director, US Army Aeronautical Services Agency, ATTN: MOAS-AI, Cameron Station, Alexandria, VA 22304-5050.

Field Manuals

*FM 1-112. Tactics, Techniques, and Procedures for the Attack Helicopter Battalion. 21 February 1991.

*FM 1-116. Tactics, Techniques, and Procedures for the Air Cavalry/Reconnaissance Troop. 20 February 1991.
*FM 1-203. Fundamentals of Flight. 3 October 1988.
*FM 1-301. Aeromedical Training for Flight Personnel. 29 May 1987.
*FM 1-400. Aviator's Handbook. 31 May 1983.
*FM 1-402. Aviator's Recognition Manual. 6 August 1984.
*FM 5-36. Route Reconnaissance and Classification. 10 May 1985.
*FM 6-30. Tactics, Techniques, and Procedures for Observed Fire. 16 July 1991.
*FM 44-30. Visual Aircraft Recognition. 28 October 1986.
*FM 55-450-2. Army Helicopter Internal Load Operations. 24 August 1984.
*FM 55-450-3. Multiservice Helicopter External Air Transport: Basic Operations and Equipment. 11 February 1991.
*FM 55-450-4. Multiservice Helicopter External Air Transport: Single-Point Rigging Procedures. 11 February 1991.
*FM 55-450-5. Multiservice Helicopter External Air Transport: Dual-point Load Rigging Procedures. 11 February 1991.
*FM 90-4. Air Assault Operations. 16 March 1987.
*FM 100-2-3. The Soviet Army Troops Organization and Equipment. 6 June 1991.

National Guard Regulation

*NGR 95-210. Army National Guard: General Provisions and Regulations for Aviation Training. 1 July 1991.

This NGR is available from Chief, National Guard Bureau, ATTN: NGB-DAY, Washington, DC 20310-2500.

Technical Manuals

*TM 1-1500-328-23. Aeronautical Equipment Maintenance Management Policies and Procedures. 28 February 1991.
*TM 11-1520-210-23. Electronic Equipment Configurations, Army Models UH-1D, HU-1H, and UH-1V. 15 May 1992.
*TM 55-1520-210-10. Operator's Manual for UH-1H/V Helicopters. 15 February 1988.
*TM 55-1520-210-CL. Operator's and Crewmember's Checklist for Army Model UH-1H/V Helicopters. 27 December 1990.
*TM 55-1520-242-MTF. Maintenance Test Flight Manual for Army Model UH-1 and EH-1 Helicopters. 20 December 1985.
*TM 55-2840-229-23-1. Aviation Unit and Intermediate Maintenance Manual for Engine Assembly, Models T53-L-11C, T53-L-11D, T53-L-13B, T53-L-703, and T53-L-13BA. 9 March 1981.
*TM 55-2840-229-23-2. Aviation Unit and Intermediate Maintenance Manual for Engine Assembly, Models T53-L-11C, T53-L-11D, T53-L-13B, T53-L-703, and T53-L-13BA. 9 March 1981.

Training Circulars

*TC 1-140. Helicopter Gunnery. 30 September 1991.
*TC 1-201. Tactical Flight Procedures. 20 January 1984.
*TC 1-204. Night Flight Techniques and Procedures. 27 December 1988.
*TC 1-210. Aircrew Training Program: Commander's Guide.
*TC 21-24. Rappelling. 24 September 1991.

READINGS RECOMMENDED

These readings contain relevant supplemental information.

Field Manuals

FM 25-100. Training the Force. 15 November 1988.
FM 25-101. Battle Focused Training. 30 September 1990.

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

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

MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (UH-1)

For use of this form, see TC 1-211; 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	STARTING ENGINE CHECKS	
4	ENGINE RUN-UP CHECKS	
5	BASELINE OR NORMAL ENGINE HIT	
6	BEFORE-TAKEOFF CHECKS	
7	TAKEOFF-TO-HOVER CHECK	
8	TORQUEMETER/POWER CHECK	
9	HOVERING TURNS CHECK	
10	SIDEWARD HOVERING FLIGHT CHECK	
11	FORWARD HOVERING FLIGHT CHECK	
12	PYLON MOUNT CHECK	
13	ENGINE RESPONSE CHECK	
14	POWER CYLINDER CHECK	
15	LOW RPM HOVER CHECK	
16	MANUAL THROTTLE OPERATIONS, EMERGENCY GOVERNOR MODE CHECK	
17	TAKEOFF AND CLIMB CHECKS	
18	LEVEL-OFF CHECKS	
19	CONTROL RIGGING CHECK	
20	AUTOROTATION RPM CHECK	
21	HYDRAULICS-OFF CHECK	
22	ENGINE TOPPING CHECK	
23	STABILIZER BAR CHECK	
24	VIBRATION ANALYSIS CHECK	
25	CYCLIC RIGGING CHECK	
26	FLIGHT INSTRUMENT CHECKS	
27	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	
28	SPECIAL/DETAILED PROCEDURES CHECKS	
29	AFTER-LANDING AND ENGINE SHUTDOWN CHECKS	
30	ORAL EVALUATION	
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		

NOTE: ITEMS 31 THROUGH 40 INTENTIONALLY LEFT BLANK FOR LATER USE.

DA FORM 5051-2-R, NOV 92 **EDITION OF JULY 90 IS OBSOLETE**

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 RCM

For use of this form, see TC 1-211; 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	NO	MANEUVER/PROCEDURE	GR
1	CREW MISSION BRIEFING		23	SIMULATED ENGINE FAILURE AT HOVER	
2	VFR FLIGHT PLANNING		24	SIMULATED ENGINE FAILURE AT ALTITUDE	
3	IFR FLIGHT PLANNING		25	MANUAL THROTTLE OPERATION, EMER GOVERNOR MODE	
4	DD FORM 365-4		26	EMERGENCY PROCEDURES	
5	DA FORM 7243-R		27	HAND AND ARM SIGNALS	
6	PREFLIGHT INSPECTION		28	INSTRUMENT TAKEOFF	
7	BEFORE-STARTING ENGINE THROUGH ENGINE SHUTDOWN		29	RADIO NAVIGATION	
8	ALSE OPERATION		30	HOLDING PROCEDURES	
9	HOVER POWER CHECK		31	UNUSUAL ATTITUDE RECOVERY	
10	HOVERING FLIGHT		32	RADIO COMMUNICATION PROCEDURES	
11	VMC TAKEOFF		33	TWO-WAY RADIO FAILURE PROCEDURES	
12	SIMULATED MAXIMUM PERFORMANCE TAKEOFF		34	NONPRECISION APPROACH	
13	TRAFFIC PATTERN FLIGHT		35	PRECISION APPROACH	
14	FUEL MANAGEMENT PROCEDURES		36	INADVERTENT IMC PROCEDURES/VHIRP	
15	PILOTAGE AND DEAD RECKONING		37	AIRCRAFT SURVIVABILITY EQUIPMENT	
16	VMC APPROACH		38	MARK XII IFF SYSTEM	
17	SHALLOW APPROACH TO RUNNING LANDING		39	PINNACLE OR RIDGELINE OPERATION	
18	CONFINED AREA OPERATIONS		40	FM RADIO HOMING	
19	SLOPE OPERATIONS		41	AERIAL OBSERVATION	
20	HOVER OGE CHECK		42	EVASIVE MANEUVERS	
21	POSTFLIGHT INSPECTION		43	MULTIAIRCRAFT OPERATIONS	
22	HOVERING AUTOROTATION		44	RAPPELLING PROCEDURES	

DA FORM 5702-R, NOV 92 **EDITION OF SEP 88 IS OBSOLETE**

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 RCM

NO	MANEUVER/PROCEDURE	GR	NO	MANEUVER/PROCEDURE	GR
45	INTERNAL RESCUE-HOIST OPERATIONS		67	TERRAIN FLIGHT DECELERATION	
46	AERIAL MINE DELIVERY		68	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION	
47	PARADROP OPERATIONS		69	TACTICAL COMMUNICATION PROCEDURES AND ECCM	
48	STABILITY OPERATIONS		70	TACTICAL REPORT	
49	EXTERNAL LOAD OPERATIONS		71	STANDARD AUTOROTATION WITH TURN	
50	INTERNAL LOAD OPERATIONS		72	SIMULATED HYDRAULIC SYSTEM MALFUNCTION	
51	LZ OR PZ RECON AND RECOMMENDATION		73	ORAL EVALUATION	
52	ROUTE RECONNAISSANCE		74		
53	CALLING FOR/ADJUSTING INDIRECT FIRE		75		
54	AERIAL RADIO RELAY		76		
55	ACTIONS ON CONTACT		77		
56	ZONE RECONNAISSANCE		78		
57	AREA RECONNAISSANCE		79		
58	STANDARD AUTOROTATION		80		
59	LOW-LEVEL AUTOROTATION		81		
60	SIMULATED ANTITORQUE MALFUNCTION (FPS)		82		
◇61	TERRAIN FLIGHT MISSION PLANNING		83		
◇62	TERRAIN FLIGHT NAVIGATION		84		
◇63	TERRAIN FLIGHT		85		
64	TECHNIQUES OF MOVEMENT		86		
65	WIRE OBSTACLES		87		
66	MASKING AND UNMASKING		88		

REVERSE, DA FORM 5702-R, NOV 92

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 NCM

For use of this form, see TC 1-211; 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	NO	MANEUVER/PROCEDURE	GR
(1)	PREFLIGHT INSPECTION (CE)		(23)	EMERGENCY EGRESS	
(2)	PREVENTIVE MAINTENANCE SERVICE (CE)		◇24◇	EMERGENCY PROCEDURES	
(3)	BEFORE-STARTING ENGINE THROUGH ENGINE SHUTDOWN		(25)	HAND AND ARM SIGNALS	
(4)	ALSE OPERATION		(26)	FUEL SAMPLE	
◇5◇	AIRSPACE SURVEILLANCE		(27)	PASSENGER BRIEFING	
◇6◇	HOVER POWER CHECK		◇28◇	INADVERTENT IMC PROCEDURES/VHIRP	
◇7◇	HOVERING FLIGHT		(29)	AIRCRAFT SURVIVABILITY EQUIPMENT	
◇8◇	VMC TAKEOFF		(30)	MARK XII IFF SYSTEM	
9	SIMULATED MAXIMUM PERFORMANCE TAKEOFF		(31)	LOADING, SECURING, AND UNLOADING PATIENTS (MO)	
◇10◇	TRAFFIC PATTERN FLIGHT		(32)	CPR (MO)	
11	PILOTAGE AND DEAD RECKONING		(33)	VITAL SIGNS IN FLIGHT (MO)	
◇12◇	VMC APPROACH		(34)	TRIAGE (MO)	
(13)	SHALLOW APPROACH TO RUNNING LANDING		(35)	PATIENT WITH CHEST/HEAD INJURIES (MO)	
◇14◇	CONFINED AREA OPERATIONS		(36)	OXYGEN THERAPY WITH NASAL CATHETER (MO)	
◇15◇	SLOPE OPERATIONS		(37)	OXYGEN BY MASK (MO)	
◇16◇	HOVER OGE CHECK		(38)	INTRAVENOUS INFUSION (MO)	
(17)	AIRCRAFT REFUELING		(39)	MANUAL VENTILATION BY BAG-MASK (MO)	
(18)	POSTFLIGHT INSPECTION (CE)		(40)	PREFLIGHT INSPECTION OF MEDICAL EQUIPMENT (MO)	
19	HOVERING AUTOROTATION		41	PINNACLE OR RIDGELINE OPERATION	
20	SIMULATED ENGINE FAILURE AT HOVER		42	FM RADIO HOMING	
21	SIMULATED ENGINE FAILURE AT ALTITUDE		43	AERIAL OBSERVATION	
22	MANUAL THROTTLE OPERATION, EMER GOVERNOR MODE		44	EVASIVE MANEUVERS	

DA FORM 5702-1-R, NOV 92

MANEUVER/PROCEDURE GRADE SLIP FOR UH-1 NCM

NO	MANEUVER/PROCEDURE	GR	NO	MANEUVER/PROCEDURE	GR
45	MULTIAIRCRAFT OPERATIONS		67	TECHNIQUES OF MOVEMENT	
46	RAPPELLING PROCEDURES		68	WIRE OBSTACLES	
47	INTERNAL RESCUE-HOIST OPERATIONS		69	MASKING AND UNMASKING	
48	AERIAL MINE DELIVERY		70	TERRAIN FLIGHT DECELERATION	
49	PARADROP OPERATIONS		71	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION	
50	STABILITY OPERATIONS		72	TACTICAL COMMUNICATION PROCEDURES AND ECCM	
51	EXTERNAL LOAD OPERATIONS		73	STANDARD AUTOROTATION WITH TURN	
52	INTERNAL LOAD OPERATIONS		74	SIMULATED HYDRAULIC SYSTEM MALFUNCTION	
53	LZ OR PZ RECON AND RECOMMENDATION		75	PATIENT PREPARATION FOR HOIST OPERATION (MO)	
54	ROUTE RECONNAISSANCE		76	MEDICAL ANTISHOCK TROUSERS (MO)	
55	CALLING FOR/ADJUSTING INDIRECT FIRE		77	PORTABLE SUCTION APPARATUS (MO)	
56	AERIAL RADIO RELAY		78	PATIENT RESTRAINT (MO)	
57	ACTIONS ON CONTACT		79	EMERGENCY DELIVERY (MO)	
58	AIRCRAFT PREPARATION FOR MISSION		80	PORTABLE HEART RATE MONITOR (MO)	
59	ZONE RECONNAISSANCE		81	RELAYING OF PATIENT INFORMATION (MO)	
60	AREA RECONNAISSANCE		82	MEDICAL REPORT (MO)	
61	STANDARD AUTOROTATION		83	ORAL EVALUATION	
62	LOW-LEVEL AUTOROTATION		84		
63	SIMULATED ANTITORQUE MALFUNCTION (FPS)		85		
◇64	TERRAIN FLIGHT MISSION PLANNING		86		
◇65	TERRAIN FLIGHT NAVIGATION		87		
◇66	TERRAIN FLIGHT		88		

REVERSE, DA FORM 5702-1-R, NOV 92

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 2 _____ D/N/NVD
CREW TASK 3 _____ D/N/NVD
CREW TASK 4 _____ D/N/NVD
CREW TASK 5 _____ D/N/NVD
CREW TASK 6 _____ D/N/NVD
CREW TASK 7 _____ D/N/NVD
CREW TASK 8 _____ D/N/NVD
CREW TASK 9 _____ 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

UH-1 PERFORMANCE PLANNING CARD

For use of this form, see TC 1-211; the proponent agency is TRADOC.

CURRENT CONDITIONS

PA	FAT
TAKEOFF GWT	LOAD
CAL FACTOR	FUEL

	CHART VALUE	IND TRQ
MAX TORQUE AVAIL		
MAX ALLOWABLE GWT (IGE)		
MAX ALLOWABLE GWT (OGE)		
PREDICTED HOVER TORQUE		
PREDICTED HOVER TORQUE (OGE)		
GO/NO-GO TORQUE (IGE)		
GO/NO-GO TORQUE (OGE)		
DCM		

MAXIMUM CONDITIONS

PA	FAT
LOAD	FUEL

	CHART VALUE	IND TRQ
MAX TORQUE AVAIL		
MAX ALLOWABLE GWT (IGE)		
MAX ALLOWABLE GWT (OGE)		
GO/NO-GO TORQUE (IGE)		
GO/NO-GO TORQUE (OGE)		
DCM		

DA FORM 7243-R, NOV 92

CRUISE DATA				
PA	FAT		GWT	
		IAS	IND TRQ	FUEL FLOW
CRUISE				
MAX END OR R/C				
MAX RANGE				
VNE				

FUEL MANAGEMENT				
START	STOP	PPH	RESERVE	BURNOUT

WEIGHT COMPUTATION	
BASIC WEIGHT	
CREW AND FLT EQUIP WEIGHT	
MISSION EQUIP WEIGHT	
OPERATING WEIGHT	
FUEL WEIGHT	
PAX, BAGGAGE, CARGO, AND AMMO WEIGHT	
TAKEOFF GWT	

REMARKS

REVERSE, DA FORM 7243-R, NOV 92

TC 1-211
9 DECEMBER 1992

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of staff

Official:

MILTON H. HAMILTON
Administrative Assistani to the
Secretary of the Army
02915

DISTRIBUTION:

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INDEX

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