Training Circular
No. 1-215

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 2 March 1993

AIRCREW TRAINING MANUAL
OBSERVATION HELICOPTER, OH-58A/C AND OH-6
AVIATOR/AEROSCOUT OBSERVER

CONTENTS

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

---

*This publication supersedes TC 1-215, 13 March 1990, and pages 4-1 through 4-28 and 4-68 through 4-94 of FM 1-544, 4 September 1990.

Page

Page

CHAPTER 8 EVALUATIONS

Section I. Evaluation Principles and Grading Considerations

Section II. Evaluation Guidelines

CHAPTER 9 AIRCREW GRADING SYSTEM

BLANK FORMS

DA Form 5051-1-R, Maintenance Test Flight Maneuvers Grade Slip for OH-58 Aviators
DA Form 5051-7-R, Maintenance Test Flight Maneuvers Grade Slip for OH-6 Aviators
DA Form 5865-R, Maneuver/Procedure Grade Slip for OH-58/OH-6 Aviators
DA Form 5866-R, Maneuver/Procedure Grade Slip for OH-58/OH-6 AO/AFSO
DA Form 7121-R, Battle-Rostered Crew Evaluation/Training Grade Slip

PREFACE

This manual provides specific guidelines for executing OH-58A/C and OH-6 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 efforts of all crew members. The prescribed tasks, conditions, standards, and descriptions explain each crew member's responsibility 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 OH-58A/C and OH-6 crew members.

This manual applies to unit commanders, evaluators, trainers, maintenance test pilots, and crew members who operate OH-58A/C and OH-6 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.

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

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

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

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

This publication has been reviewed for operations security considerations.

CHAPTER 1

INTRODUCTION

This ATM describes training requirements for OH-58A/C and OH-6 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 and the left seat for each AO/AFSO. The aviator will perform all in-flight duties and be evaluated during all hands-on performance tests in the assigned station(s). For example, 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, but a portion of the evaluation will be conducted from each station. (This is not required for no-notice proficiency flight evaluations.) 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. The individual may begin flying as a member of that crew while in mission training. TC 1-210 further defines battle rostering.

1-3. SYMBOL USAGE AND WORD DISTINCTIONS

a. Symbol Usage.

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

(2) P* indicates the pilot on the controls. P indicates the pilot not on the controls. (AOs/AFSOs can be expected to fulfill either of these duty positions, depending on the task to be performed or the training situation.)

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 that 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 PVS-5 or AN/AVS-6 (ANVIS).

(b) NVD refers to NVS and NVG.

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

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

CHAPTER 2

QUALIFICATION TRAINING

This chapter prescribes minimum qualification training requirements. Units are authorized to conduct initial aviator qualification training in the aircraft. This chapter also describes this training and the prerequisites and qualification requirements for unit trainers and evaluators. Qualification training for aeroscout observers and aerial fire support observers is conducted only at the USAAVNC or at a USAAVNC-approved school. Units are not authorized to conduct this training.

2-1. ACADEMIC TRAINING

a. During academic training, the aviator receives sufficient instruction to be knowledgeable of the subjects listed in Figure 2-1. When possible, academic training should be completed before corresponding flight training. The subjects may be presented in any order. However, the introduction should be first, and the aircraft operator's manual written examination should be last. Systems instruction includes training in operation, capabilities, limitations, and malfunction analysis.

Introduction
Structure
Fuel and oil systems
Power plant and related systems
Transmission and drive systems
Rotor systems
Electrical systems
Flight control and hydraulic systems
Mission equipment*
Weight and balance
Avionics equipment*
Emergency procedures*
Aircraft limitations and performance planning charts*
Aircraft operator's manual written examination

*These subjects may be covered outside the classroom by the IP.

Figure 2-1. Academic subjects for initial aircraft qualification

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

2-2. FLIGHT TRAINING

a. During flight training, the aviator is trained to proficiency in the base tasks identified in Chapter 5. Minimum flight time will not be less than ten hours. A minimum of one hour of night and one hour of hooded flight instruction will be conducted in the aircraft. More efficient training and learning retention will result if flight training is completed without interruption.

b. Realism is important in qualification flight training. To achieve it, commanders must ensure that training includes operation of the aircraft at or near maximum gross weight.

c. Training in night operations must include locating and operating all aircraft lighting equipment. It should also include takeoffs and landings with minimum runway or field lighting appropriate for the mission and ambient light conditions.

2-3. SERIES QUALIFICATION TRAINING

a. Qualification training between the OH-58A and OH-58C or between the various OH-6-series helicopters will consist of sufficient academic instruction and a minimum of three hours of flight instruction by an IP/SP of which one hour must be at night.

b. Qualification training in the OH-58A+ is necessary if--

(1) An aviator is OH-58C qualified only (see 2-3a above).

(2) An aviator is OH-58A qualified or OH-58A <u>and</u> OH-58C qualified. The aviator will receive sufficient academic instruction on the differences between the OH-58A and the OH-58A+.

NOTE 1: If an aviator is OH-58A+ qualified only and desires qualification in the OH-58A, see 2-3b2 above. If the aviator desires qualification in the OH-58C, see 2-3a above.

NOTE 2: The term OH-58A+ is used synonymously with OH-58A (720).

2-4. INSTRUMENT TRAINING

a. An aviator who is not instrument qualified must satisfactorily complete instrument qualification training conducted at the USAAVNC.

b. Instrument training for the Reserve Component is accomplished in the UH-1 aircraft. Before this training is started, OH-58/OH-6 and UH-1 contact evaluations must be completed. UH-1 contact training is conducted per TC 1-211.

2-5. NVG TRAINING

a. Initial NVG qualification training will be conducted according to TC 1-210 and this ATM and will consist of a minimum of ten hours of flight time. Before undergoing NVG qualification training, an aviator must be qualified and current in the aircraft. He also must complete the training within 45 consecutive days. (The 45-day period is a sliding window within the 90-day progression period.) Figure 2-2 shows the required academic NVG training requirements.

<u>Subjects</u>

Vision, depth perception, and night vision orientation
Introduction to NVG
Aircraft modification requirements for NVG flight
Night terrain interpretation
NVG navigation, to include map preparation
Night tactical operations, to include lighting
NVG ground and air safety

Figure 2-2. Academic subjects for NVG training

b. Before the first NVG training flight, the aviator must undergo a one-hour training period at night in a static aircraft with an NVG IP/SP. Minimum tasks that the aviator must perform are aircraft emergency procedures, NVG emergency procedures, and crew coordination. This one-hour period and, if applicable, the NVG flight evaluation may be applied toward the ten-hour flight minimum required for NVG qualification. Figure 2-3 (page 2-4) shows those tasks that the aviator must perform during NVG qualification training. During this training, the aviator must occupy a crew position with access to the flight controls. After the aviator completes the training, his proficiency will be determined by a flight evaluation or by continual evaluation by an NVG IP/SP.

Number	Title
1000	Conduct crew mission briefing
1007	Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks
1016	Perform hover power check
1017	Perform hovering flight
1018	Perform a normal takeoff
1023	Perform fuel management procedures
1024	Perform emergency procedures for an actual or a simulated NVG failure
1025	Navigate by pilotage and dead reckoning
1028	Perform VMC approach
1032	Perform slope operations
1033	Perform terrain flight mission planning
1034	Perform terrain flight takeoff
1035	Perform terrain flight
1036	Perform hover OGE check
1037	Perform NOE deceleration
1038	Perform terrain flight approach
1067	Perform aerial observation
1068	Perform or describe emergency procedures
1083	Perform or describe inadvertent IMC procedures/VHIRP
1090	Perform masking and unmasking
1097	Negotiate wire obstacles

Figure 2-3. Aircraft NVG qualification training tasks

c. An aviator who is NVG-qualified in an aircraft other than the OH-58/OH-6 must undergo additional NVG qualification in the training aircraft. He must complete the requirements in TC 1-210 and the training shown in Figure 2-4.

NOTE: A crew member qualified in the AN/PVS-5 or AN/AVS-6 must receive sufficient academic instruction on system operation to qualify in the other model.

Subjects	Hours
Academic training[1]	
Static aircraft training period[2]	1.0
Demonstration and practice of NVG tasks (Figure 2-3) and any special/additional tasks designated by the commander	5.0
Flight evaluation[3]	2.0
Total Hours[4]	8.0

[1]Academic training will include the subject areas shown in Figure 2-2.

[2]Training will be conducted at night by an NVG IP/SP.

[3]This may be a continual evaluation.

[4]This time may be reduced to no less than 4.5 hours based on the IP's or SP's recommendation concerning the aviator's proficiency. It may include the NVG flight evaluation but not the static aircraft training period.

Figure 2-4. Aircraft NVG qualification training requirements

2-6. AIRCRAFT ATAS QUALIFICATION

The commander should select aviators/AOs for ATAS qualification based on the unit's needs and each individual's demonstrated ability. Aviators/AOs who are designated to operate the ATAS and who were not previously ATAS-qualified must undergo ATAS qualification training before operating the system. Training materials can be obtained by writing Commander, US Army Aviation Center, ATTN: ATZQ-TDO-TSD, Fort Rucker, AL 36362-5035, or calling DSN 558-3283/5990 or commercial (205) 255-3283/5990. Aircraft ATAS qualification tasks are listed in Figure 2-5 (page 2-6), and an ATAS qualification training guide is shown in Figure 2-6 (page 2-6). The requirements for aircraft ATAS qualification are listed below.

a. The aviator will occupy the right seat and the AO/AFSO will occupy the left seat.

b. The aviator/AO will complete the training shown in Figures 2-7 and 2-8 (page 2-7).

c. The aviator and AO will satisfactorily complete an evaluation by an ATAS IP/SP during the day and at night. They may satisfy the night requirement by wearing the NVG or by flying night unaided. Mandatory evaluation tasks are identified in Chapter 5. The evaluation may be a continual evaluation.

NOTE: An IP/SP will train and evaluate the aviator/AO before the aviator/AO operates the ATAS under the NVG.

Number	Title
2023	Perform installation and loading of weapons
2024	Perform preflight inspection of weapon systems
2031	Engage target with the ATAS
2034	Safe and clear weapon systems

Figure 2-5. Aircraft ATAS qualification tasks

Subjects	Hours
Academic training	3.0
Aircraft training period[1]	1.5
Demonstration and practice of ATAS qualification tasks[2]	2.0
Flight evaluation[3]	1.0
Total	7.5

[1]This subject consists of switchology and systems usage conducted in a static aircraft during systems preflight and operation.

[2]This time will consist of one hour day and one hour night/NVG, as a minimum.

[3]This may be a continual evaluation.

Figure 2-6. ATAS qualification training guide

Subjects
Systems description
Theory of IR energy
Missile description
Systems operation

Figure 2-7. ATAS academic training requirements

Subjects	Hours
Preflight[1]	.5
System run-up/test[1]	.5
Flight tasks[2]	2.0
ARM/DEARM[1]	.5
Total	3.5

[1]This time does not reflect actual flight time.
[2]A minimum of one hour of day and one hour of night or NVG is required for qualification.

Figure 2-8. ATAS flight training requirements

2-7. PILOT-IN-COMMAND, UNIT TRAINER, AND EVALUATOR PREREQUISITES AND REQUIREMENTS

Personnel in these categories must meet the requirements stated in AR 95-1.

NOTE: For IP/IE equivalency evaluations given by HQDA, the commander will forward a written request for approval of the desired evaluation to HQDA (DAMO-TRS). Per AR 95-1, the request must be sent through the Commander, US Army Aviation Center, ATTN: ATZQ-ESF, Fort Rucker, AL 36362-5214. The aviator's training record must show completion of minimum requirements. It also must include DA Forms 4507-R, 5865-R, and 4507-2-R, if used. (See Chapter 9.) The instructor will sign DA Forms 4507-R, 5865-R, and 4507-2-R (if used) to indicate satisfactory completion of the required training. Initial IP/IE evaluations will be conducted according to paragraph 8-3. Written examinations will be administered as needed. Failure to meet any prerequisite or failure of any portion of an examination will terminate the evaluation. Equivalency reevaluations will not be conducted. An individual who fails any portion of the evaluation must attend the resident course to obtain an initial IP/IE designation.

2-8. MAINTENANCE TEST PILOT PREREQUISITES AND REQUIREMENTS

a. MPs must meet the requirements stated in AR 95-1 and TC 1-210.

b. If an MP needs to perform maintenance test flights on an aircraft in which he has not received formal resident training, he may be trained in the field by an ME in the OH-58A/C or OH-6. Field training procedures are as follows:

(1) **Prerequisites.**

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

(b) The aviator seeking training must be qualified as an MP through initial qualification or in a challenge program in the AH-1, UH-1, or OH-58.

(2) **Qualification requirements.**

(a) The aviator must receive MTF training from an ME in the appropriate aircraft. Figure 2-9 shows the recommended flight training outline.

(b) Academic training will be conducted and documented showing that the prospective MP has sufficient knowledge in all aircraft systems, including components and their control movements.

(c) Before the final evaluation is conducted, the unit will coordinate with the Directorate of Evaluation and Standardization (DOES), Fort Eustis, VA for approval. Only DOES or a 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 unit may use the final evaluation grade slip recommendation for MP status 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: ATSQ-LES-M, Fort Eustis, VA 23604-5431.

Task	Hours
Flight planning[1]	1.0
Flight readiness inspection[1]	5.0
Before-starting engine checks[1]	2.0
Systems and engine run-up checks[1]	2.0
Baseline and normal HIT checks[1]	.5
Test flight hover maneuvers[2]	2.0
In-flight test flight maneuvers[2]	3.0
After-landing and engine shutdown checks[1]	2.0
Postflight checks[1]	1.0
Forms and records completion[1]	2.0
Total	5.0

[1]These tasks are not considered as flight time.
[2]These hours may be decreased based on demonstrated proficiency to an ME.

Figure 2-9. Flight training guide for subsequent MP qualification

2-9. MAINTENANCE TEST FLIGHT EVALUATOR

a. Prerequisites. The aviator must meet the requirements stated in AR 95-1 and TC 1-210.

b. Qualification Requirements. The MP seeking ME designation will be qualified according to AR 95-1 and TC 1-210. He also must be designated, in writing, by the commander.

(1) **Grade slips.** A copy of the initial evaluation grade slip for **ME** duties will be forwarded to Assistant Commandant, US Army Aviation Logistics School, ATTN: ATSQ-LES-M, Fort Eustis, VA 23604-5431.

(2) **DOES-designated MEs.** The Director of Evaluation and Standardization, US Army Aviation Logistics School, will identify MEs in the field who show exceptional abilities in maintenance

test flight standardization. These individuals will be selected during DA flight standardization visits and will receive a designation from the DOES.

2-10. AEROSCOUT OBSERVER/AERIAL FIRE SUPPORT OBSERVER

An AO/AFSO is initially qualified in the OH-58A/C or OH-6 when he has completed all phases-of training and has graduated from the appropriate qualification course. This course is conducted only at the USAAVNC or at a USAAVNC-approved school. Before performing AO/AFSO duties in the other aircraft, he must demonstrate to an IP/SP proficiency in the tasks listed in Figure 2-10. If the AO/AFSO is required to maintain NVG currency or is in an NVG-designated position, he will demonstrate proficiency to an NVG IP/SP at night under NVG, as indicated.

Number	Title	NVG
1005	Perform preflight inspection	
1007	Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks	X
1011	Perform straight-and-level flight	
1012	Perform turns, climbs, and descents	
1017	Perform hovering flight	
1018	Perform a normal takeoff	
1023	Perform fuel management procedures	X
1024	Perform emergency procedures for an actual or simulated NVG failure	X
1028	Perform VMC approach	
1035	Perform terrain flight	X
1076	Perform radio navigation	
1078	Perform unusual attitude recovery	
1079	Perform radio communication procedures	
1095	Operate aircraft survivability equipment	
1099	Operate Mark XII IFF system	

Figure 2-10. Additional aircraft qualification task list

CHAPTER 3

REFRESHER TRAINING

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

3-1. ACADEMIC AND FLIGHT TRAINING REQUIREMENTS

A crew member returning to an operational aviation position after having been prohibited or excused from flying duties for more than 180 consecutive days will receive refresher training. When the crew member enters the unit's ATP with fewer than 180 consecutive days of nonflying duties, the commander may require him to undergo refresher training based on a records check or a proficiency flight evaluation.

a. A crew member undergoing refresher training must demonstrate proficiency in all base tasks (day and night) as indicated in Chapter 5 (pages 5-3 through 5-6), as appropriate, and the tasks listed in paragraph 5-3. Figure 3-1 is a guide for developing a refresher academic training program. Figure 3-2 (page 3-2) is a guide for developing a refresher flight training program.

Subjects

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

*Aviator only.

Figure 3-1. Refresher academic training guide

b. Units may use applicable USAAVNC lesson plans, ETPs, and POIs to conduct academic training. They may obtain these materials by writing to Commander, US Army Aviation Center, ATTN: ATZQ-TDO-TS, Fort Rucker, AL 36362-5035, or by calling DSN 558-3283/5990 or commercial (205) 255-3283/5990.

Flight Instruction	Aviator (Hours)	AO/AFSO (Hours)
Local area orientation	2.0	2.0
Demonstration and practice of base tasks	12.0	5.0
Flight evaluation	2.0	2.0
Total	16.0	9.0

Figure 3-2. Refresher flight training guide

3-2. NIGHT FLIGHT TRAINING REQUIREMENTS

Night vision goggle refresher training requirements are shown in Figure 3-3. During NVG refresher training, a crew member must demonstrate proficiency in the appropriate tasks listed in Figure 3-4.

a. **Unaided Night Flight.** Task requirements are listed in Chapter 5 (paragraph 5-3); night considerations are in Chapter 6.

b. **NVG Flight.** TC 1-210 discusses NVG refresher training. Figure 3-4 shows the NVG refresher training task list.

Subjects	Aviator (Hours)	AO/AFSO (Hours)
Academic training[1]		
Static aircraft training period[2]	1.0	1.0
Demonstration and practice of NVG tasks (Figure 3-4) and any additional tasks designated by the commander[3]	5.0	5.0
Flight evaluation[4]	2.0	1.5
Total[5]	8.0	7.5

[1]Academic training will include the subject areas shown in Figure 2-4.

[2]The aircraft training will be conducted at night.

[3]Figure 3-4 will be used to conduct NVG refresher flight training.

[4]This may be a continual evaluation.

[5]This time may be reduced to no less than 4.5 hours (aviator) or 3.5 hours (AO/AFSO) based on the IP's/SP's recommendation concerning the crew member's proficiency. It may include the NVG flight evaluation but not the static aircraft training period.

Figure 3-3. NVG refresher training requirements

Number	Title	Aviator	AO/AFSO
1000	Conduct crew mission briefing	X	
1007	Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks	X	X
1016	Perform hover power check	X	
1017	Perform hovering flight	X	
1018	Perform a normal takeoff	X	
1023	Perform fuel management procedures	X	X
1024	Perform emergency procedures for an actual or a simulated NVG failure	X	X
1025	Navigate by pilotage and dead reckoning	X	X
1028	Perform VMC approach	X	
1032	Perform slope operations	X	
1033	Perform terrain flight mission planning	X	X
1034	Perform terrain flight takeoff	X	

Figure 3-4. NVG refresher training task list

Number	Title	Aviator	AO/AFSO
1035	Perform terrain flight	X	X
1036	Perform hover OGE check	X	
1037	Perform NOE deceleration	X	
1038	Perform terrain flight approach	X	
1067	Perform aerial observation	X	X
1068	Perform or describe emergency procedures	X	X
1083	Perform or describe inadvertent IMC procedures/VHIRP	X	X
1090	Perform masking and unmasking	X	X
1097	Negotiate wire obstacles	X	X

Figure 3-4. NVG refresher training task list (continued)

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 tasks selected by the commander to support the unit's METL. Mission training should be done during either mission support or collective training.

4-1. TRAINING REQUIREMENTS

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

b. Proficiency in mission-related tasks is the goal of mission training. During mission training, crew members do not have minimum hour, task, iteration, or APART requirements in the aircraft in which the training is being conducted. The only requirements they have are those designated by the unit commander and AR 95-1 (currency). An AO/AFSO does not have task, iteration or APART requirements. However, he must meet the 1.5-hour emergency aircraft handling tasks requirement every 45 days and the requirements in AR 600-106. Mission training guidelines shown in Figure 4-1 (page 4-2) are based on FAC 1 requirements for mission/additional tasks. When possible, mission training will be accomplished during mission support or combined arms training. Under the supervision of the IP/SP, the battle-rostered PC is responsible for training his battle-rostered AO/AFSO from RL 2 to RL 1. With the exception of a run-on landing as described in Task 1028, Perform VMC Approach, and Task 1078, Perform Unusual Attitude Recovery, the PC may conduct training in emergency aircraft handling tasks. Both of these maneuvers must be conducted with an UT/IP/SP. The mission training (RL 2) guidelines shown in Figure 4-1 are based on FAC 1 requirements for mission tasks.

4-2. NIGHT/NVG TRAINING

a. **Unaided Night Flight.** Mission tasks which the commander may designate for unaided night flight are listed in Chapter 5

(Figure 5-3). Night considerations are listed in Chapter 6. Additional tasks may be developed by the commander.

b. NVG Flight. NVG mission training requirements are outlined in TC 1-210. Mission tasks that the commander may designate for NVG flight are listed in Chapter 5 (Figure 5-3) . Additional tasks may be developed by the commander. Night considerations are listed in Chapter 6.

(1) Before undergoing NVG mission training, the aviator or AO must have completed qualification or refresher training and be NVG-current. NVG flight considerations are listed in Chapter 6.

(2) For NVG progression to RL 1, an aviator or AO must complete or have completed an NVG evaluation given at night in the aircraft by an NVG IP or SP. However, the commander may designate an aviator or AO RL 1 for NVG purposes if the aviator's or AO'S records indicate he was previously NVG mission qualified. The aviator or AO also must have-demonstrated proficiency in those tasks designated by the gaining unit commander and be NVG-current.

Flight Instruction	Hours
Local area orientation*	2.0
Mission tasks	16.0
Total	18.0

*Not required if accomplished during refresher training (Figure 3-2).

Figure 4-1. Mission flight training guide

4-3. MAINTENANCE TEST PILOT TRAINING

Mission training increases the aviator's proficiency in performing maintenance test flights. The tasks outlined in Chapter 7 are mandatory mission tasks for aviators designated to perform maintenance test flights. They will be included on the Commander's Task List in the Individual Aviation Training Folder. Commanders are not authorized to delete any MTF tasks. Personnel performing duties as MPs should be limited to duties in a maximum of two aircraft (one primary and one additional/alternate) and may be classified FAC 2.

CHAPTER 5

CONTINUATION TRAINING

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

5-1. TRAINING REQUIREMENTS

a. Semiannual Flying-Hour Requirements (Aircraft). The minimum requirements for a crew member are as follows:

(1) Aviator.

(a) FAC 1 --40 hours observation, or 55 hours aero-Scout , which must be flown from the aviator's designated crew station(s).

(b) FAC 2 --30 hours, all of which must be flown from the aviator's designated crew station(s).

(c) FAC 3 --not applicable due to the lack of a compatible flight simulator for the OH-58A/C and the OH-6 (per TC 1-210).

NOTE 1: The OH-58A/C and OH-6 do not have compatible simulators; therefore, the aviator must fly three hours of hood semiannually. The aviator may be required to fly additional hours of hood at the direction of the commander.

NOTE 2: Regardless of their crew position, UTs and evaluators may credit those hours they fly while performing their assigned duties toward their semiannual flying-hour requirements. Copilot time will not suffice for the FAC 1 and 2 flying-hour requirements.

(2) AO/AFSO. The minimum flying-hour requirement is 35 hours, all of which must be flown as a crew member in the left seat. A minimum of 15 hours will be emergency aircraft handling flight training. All emergency aircraft handling flight training will be conducted by a UT/IP/SP or a battle-rostered PC. The AO/AFSO will receive 1.5 hours of training every 45 days in emergency aircraft handling tasks. Emergency aircraft handling tasks do not have to be performed every 45 days to maintain currency as long as the annual iteration requirements are met. Training in emergency aircraft handling may be conducted at night or under NVG if an IP/SP is at one set of the flight controls.

An AO/AFSO who fails to maintain the 45-day hands-on currency will be suspended from performing AO duties until he successfully completes a proficiency flight evaluation. This evaluation will be administered by an IP/SP and will include all AO/AFSO hands-on tasks.

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

(1) One iteration of all base tasks during the day and one iteration of mandatory NVG tasks as indicated in Figure 5-1 or 5-2. (Mandatory NVG tasks are indicated by an X in the appropriate column of Figures 5-1 and 5-2.) Night unaided iteration requirements are stated in paragraph 5-3.

(2) In addition to the required minimum annual tasks and iterations, MPs will perform annually a minimum of four iterations of the MTF mission tasks listed in Figure 5-4 and/or Figure 5-5. MEs will perform a minimum of two iterations from each flight crew station annually. Each MTF mission task listed is mandatory for an MTF standardization evaluation. Personnel who are required to perform MTF duties in an additional or alternate aircraft will perform four iterations of the required tasks in each additional/alternate aircraft.

(3) Any iteration requirements for mission tasks listed in Figure 5-3 as determined by the commander.

(4) Any iteration requirements for additional tasks established by the commander.

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

NOTE 1: To meet annual task and iteration requirements, crew members must perform day, night, and NVG task iterations separately. During an evaluation, an iteration performed in a more demanding mode of flight may suffice for an iteration performed in a less demanding mode of flight. The commander determines which mode of flight is more demanding.

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

NOTE 3: Tasks identified with an or between the S and the I columns may be evaluated during either or both evaluations.

(6) AO/AFSOs are not required to conduct a run-on landing every 45 days as described in Task 1028, Perform VMC Approach, or Task 1078, Perform Unusual Attitude Recovery. These tasks are only required to be evaluated annually or as directed by the commander.

Number	Title	S	I	NVG
1000	Conduct a crew mission briefing	X	X	X
1001	Plan a VFR flight	X		
1002	Plan an IFR flight		X	
1003	Prepare/validate DD Form 365-4 (Weight and Balance Clearance Form F--Tactical/Transport)	X		
1004	Prepare DA Form 4887-R (RW Performance Planning Card)	X	X	
1005	Perform preflight inspection	X		
1007	Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks	X		X
1016	Perform hover power check	X	X	X
1017	Perform hovering flight	X	X	X
1018	Perform a normal takeoff	X		X
1022	Perform traffic pattern flight			
1023	Perform fuel management procedures	X	X	X
1024+	Perform emergency procedures for an actual or a simulated NVG failure			X
1025	Navigate by pilotage and dead reckoning			X
1028	Perform VMC approach	X		X
1032	Perform slope operations	X		X
1033	Perform terrain flight mission planning	X		X
1034	Perform terrain flight takeoff	X		X
1035	Perform terrain flight	X		X

Legend:

S--tasks that are mandatory for standardization flight evaluation.
I--tasks that are mandatory for instrument flight evaluation.
NVG--tasks that must be evaluated at night while the crew member is wearing the NVG.
+--tasks that apply only to those crew members who are maintaining NVG currency or are in NVG-designated positions.
*--This maneuver is authorized only during initial aircraft qualification and for IPs/SPs designated to conduct touchdown emergency procedures. This maneuver is a required APART evaluation maneuver for those IPs/SPs designated to conduct touchdown emergency procedures training. Emergency procedures training criteria outlined in AR 95-1 must be met before this maneuver is performed.

Figure 5-1. Aviator base task list

Number	Title	S	I	NVG
1036	Perform hover OGE check	X		X
1037	Perform NOE deceleration	X		X
1038	Perform terrain flight approach	X		X
1050	Perform hovering autorotation	X		
1052	Perform simulated engine failure, IGE hover			
1053	Perform simulated engine failure at altitude	X or	X	
1057*	Perform simulated hydraulic system malfunction	X		
1066*	Perform standard autorotation	X		
1067	Perform aerial observation	X		X
1068	Perform or describe emergency procedures	X		X
1072*	Perform low-level autorotation	X		
1073*	Perform low-level and low-airspeed autorotation	X		
1074*	Perform standard autorotation with turn	X		
1075	Perform instrument takeoff			
1076	Perform radio navigation		X	
1077	Perform holding procedures			
1078	Perform unusual attitude recovery	X or	X	
1079	Perform radio communication procedures		X	
1080	Perform 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
1090	Perform masking and unmasking	X		X
1091	Perform tactical communication procedures and electronic counter-countermeasures	X		
1092	Transmit a tactical report	X		
1093	Perform techniques of movement			
1094	Identify major US or allied equipment and major threat equipment	X		
1095	Operate aircraft survivability equipment	X		
1096	Perform actions on contact	X		
1097	Negotiate wire obstacles	X		X
1099	Operate Mark XII IFF system	X		
1151*	Perform simulated antitorque malfunction (fixed-pedal setting)	X		

Figure 5-1. Aviator base task list (continued)

Number	Title	S	NVG
1005	Perform preflight inspection	X	
1007	Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks	X	X
1011*	Perform straight-and-level flight	X	
1012*	Perform turns, climbs, and descents	X	
1017*	Perform hovering flight	X	
1018*	Perform a normal takeoff	X	
1023	Perform fuel management procedures	X	X
1024+	Perform emergency procedures for actual or simulated NVG failure		X
1025	Navigate by pilotage and dead reckoning	X	X
1028*	Perform VMC approach	X	
1033	Perform terrain flight mission planning	X	X
1035	Perform terrain flight	X	X
1067	Perform aerial observation	X	X
1068	Perform or describe emergency procedures	X	X
1076	Perform radio navigation		
1078*	Perform unusual attitude recovery	X	
1079	Perform radio communication procedures	X	
1080	Perform procedures for two-way radio failure		
1081	Perform nonprecision approach		
1082	Perform precision approach		
1083	Perform or describe inadvertent IMC procedures/VHIRP	X	X

Legend:

S--tasks that are mandatory for standardization flight evaluation.

NVG--tasks that must be evaluated at night while the AO or AFSO is wearing the NVG.

+--tasks that apply only to those crew members who are maintaining NVG currency or are in NVG-designated positions.

--Denotes "emergency aircraft handling tasks." The AO will perform P duties. The run-on landing technique as described in Task 1028, Perform VMC Approach, and Task 1078, Perform Unusual Attitude Recovery, is to be performed with a UT/IP/SP only. Training in emergency aircraft handling may be conducted at night and under NVG if an IP/SP is at one set of the flight controls.

Figure 5-2. Aeroscout observer base task list

Number	Title	S	NVG
1090	Perform masking and unmasking	X	X
1091	Perform tactical communication procedures and electronic counter-countermeasures	X	
1092	Transmit a tactical report	X	
1094	Identify major US or allied equipment and major threat equipment	X	
1095	Operate aircraft survivability equipment	X	
1096	Perform actions on contact		
1097	Negotiate wire obstacles	X	
1099	Operate Mark XII IFF System	X	

Figure 5-2. Aeroscout observer base task list (continued)

Number	Title
2004*	Perform pinnacle or ridgeline operation
2005	Perform FM radio homing
2008	Perform evasive maneuvers
2009	Perform multiaircraft operations
2018	Reconnoiter and recommend an LZ or a PZ
2019	Perform a route reconnaissance
2020	Call for and adjust indirect fire
2023**	Perform installation and loading of weapons

*--Aviator task only.
**--ATAS task.

NOTE 1: Commanders may choose the appropriate mission tasks for each duty position.
NOTE 2: If the commander designates one of the ATAS tasks, he must designate all of the ATAS tasks. Crew members designated to operate the ATAS system will demonstrate proficiency during the APART. Crew members maintaining NVG currency or those in NVG-designated positions will demonstrate their proficiency while wearing the NVG. The commander will determine whether this evaluation is conducted during the APART or during the NVG annual evaluation.
NOTE 3: An IP/SP will train and evaluate the aviator/AO before the aviator/AO operates the ATAS under the NVG.

Figure 5-3. Crew member mission task list

Number	Title
2024**	Perform a preflight inspection of weapon systems
2031**	Engage target with the ATAS
2034**	Safe and clear weapon systems
2040	Select a combat position
2054	Perform target handover to an attack helicopter
2061	Reconnoiter and recommend a holding area
2063	Perform a security mission
2064	Perform an aerial radiological survey
2066	Perform a zone reconnaissance
2067	Perform an area reconnaissance

Figure 5-3. Crew member mission task list (continued)

Number	Title
2700	Perform prior-to-maintenance-test-flight checks
2702	Perform before-starting engine checks
2704	Perform starting engine checks
2706	Perform engine run-up checks
2708	Perform baseline and normal engine health indicator test
2710	Perform before-takeoff check
2712	Perform takeoff to a hover
2714	Perform hover power check
2716	Perform hovering turns
2718	Perform sideward flight
2720	Perform forward hovering flight
2722	Perform pylon isolation mount check
2724	Perform power cylinder check
2726	Perform engine response check
2728	Perform takeoff and climb check
2730	Perform control rigging check
2732	Perform autorotation RPM check
2734	Perform engine performance check
2736	Perform hydraulics-off check
2738	Perform flight instruments check
2740	Perform communication and navigation equipment checks
2742	Perform after-landing and engine-shutdown checks
2744	Perform special/detailed procedures

Figure 5-4. OH-58A/C MP mission task list

Number	Title
2770	Perform prior-to-maintenance-test-flight checks
2771	Perform before-starting engine checks
2772	Perform starting engine checks
2773	Perform engine run-up checks
2774	Perform baseline and normal engine health indicator test
2775	Perform before-takeoff check
2776	Perform takeoff to a hover
2777	Perform hovering turns
2778	Perform sideward flight
2779	Perform forward hovering flight
2780	Perform engine response check
2781	Perform low RPM hover
2783	Perform takeoff and climb check
2784	Perform control rigging check
2785	Perform autorotation RPM check
2786	Perform engine performance check
2788	Perform collective bungee check
2789	Perform flight instruments check
2790	Perform communication and navigation equipment checks
2791	Perform before-landing checks
2792	Perform after-landing checks
2793	Perform engine-out/reignition check
2794	Perform engine-shutdown checks
2795	Perform special/detailed procedures

Figure 5-5. OH-6 MP mission task list

5-2. NVG CURRENCY REQUIREMENTS

a. To be considered NVG current, the crew member must participate every 45 consecutive days in a one-hour flight from a crew position with access to the flight controls at night in the aircraft while wearing NVG.

b. A crew member whose currency has lapsed must complete, as a minimum, a one-hour NVG proficiency evaluation. The evaluation will be given by an NVG IP/SP at night in the aircraft with the crew member having access to the flight controls. The tasks that will be evaluated are listed below.

(1) Task 1017, Perform hovering flight.

(2) Task 1018, Perform a normal takeoff.

(3) Task 1024, Perform emergency procedures for actual or simulated NVG failure.

(4) Task 1028, Perform VMC approach.

(5) Task 1032, Perform slope operations.

(6) Task 1068, Perform or describe emergency procedures.

(7) Task 1083, Perform or describe inadvertent IMC procedures/VHIRP.

c. An AO/AFSO whose currency has lapsed must complete a one-hour NVG proficiency evaluation given at night by an NVG IP/SP. He must occupy the left seat while satisfying this requirement. Minimum tasks to be evaluated are listed below.

(1) Task 1007, Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks.

(2) Task 1023, Perform fuel management procedures.

(3) Task 1024, Perform emergency procedures for actual or simulated NVG failure.

(4) Task 1025, Navigate by pilotage and dead reckoning.

(5) Task 1033, Perform terrain flight mission planning.

(6) Task 1035, Perform terrain flight.

(7) Task 1068, Perform or describe emergency procedures.

(8) Task 1083, Perform or describe inadvertent IMC procedures/VHIRP.

(9) Task 1090, Perform masking and unmasking.

5-3. NIGHT UNAIDED TRAINING REQUIREMENTS

Annual night unaided training is mandatory for all crew members. The following tasks will be evaluated during refresher/ qualification training; a minimum of one iteration of each of the tasks will be performed annually. The commander may designate any of the following tasks for evaluation during the APART period.

a. **Aviator.**

(1) Task 1000, Conduct crew mission briefing.

(2) Task 1005, Perform preflight inspection.

(3) Task 1007, Perform engine-start, run-up, hover, and before-landing/takeoff checks and after-landing tasks.

(4) Task 1016, Perform hover power check.

(5) Task 1017, Perform hovering flight.

(6) Task 1018, Perform a normal takeoff.

(7) Task 1022, Perform traffic pattern flight.

(8) Task 1023, Perform fuel management procedures.

(9) Task 1025, Navigate by pilotage and dead reckoning.

(10) Task 1028, Perform VMC approach.

(11) Task 1032, Perform slope operations.

(12) Task 1068, Perform or describe emergency procedures.

b. **AO/AFSO.**

(1) Task 1005, Perform preflight inspection.

(2) Task 1007, Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks.

(3) Task 1023, Perform fuel management procedures.

(4) Task 1025, Navigate by pilotage and dead reckoning.

5-4. ANNUAL NBC TRAINING REQUIREMENTS

a. Annual NBC training is mandatory for all FAC 1 positions and for those FAC 2 positions selected by the commander. Crew members must wear MOPP4 gear during NBC training.

b. Crew members will receive NBC training in the base tasks listed below and will perform at least one iteration annually. The commander may also select mission/additional tasks based on the unit’s mission.

(1) **Aviator.**

(a) Task 1005, Perform preflight inspection.

(b) Task 1007, Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks.

(c) Task 1016, Perform hover power check.

(d) Task 1034, Perform terrain flight takeoff.

(e) Task 1035, Perform terrain flight.

(f) Task 1037, Perform NOE deceleration.

(g) Task 1038, Perform terrain flight approach.

(2) **AO.**

(a) Task 1005, Perform preflight inspection.

(b) Task 1007, Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks.

(c) Task 1035, Perform terrain flight.

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

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

(2) A qualified and current aviator, not wearing protective mask, gloves, or NBC boots, is at one set of the flight controls at all times.

(3) Aircrews do not receive emergency procedures training in flight while wearing MOPP4 gear.

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

5-5. AEROSCOUT OBSERVER EMERGENCY AIRCRAFT HANDLING PROCEDURES

As part of his 35-hour minimum semiannual flying-hour requirement, the AO/AFSO must receive, every 45 days, a 1.5-hour training flight in emergency aircraft handling procedures. This training flight will be conducted by a UT/IP/SP or a battle-rostered PC and will include the following tasks:

a. Task 1011, Perform straight-and-level flight.

b. Task 1012, Perform turns, climbs, and descents.

c. Task 1017, Perform hovering flight.

d. Task 1018, Perform a normal takeoff.

e. Task 1028, Perform VMC approach.

f. Task 1078, Perform unusual attitude recovery.

NOTE 1: The run-on landing technique as described in Task 1028, Perform VMC approach, and Task 1078, Perform unusual attitude recovery, is to be performed with a UT/IP/SP only.

NOTE 2: Training in emergency aircraft handling may be conducted at night and under NVG if an IP\SP is at one set of the flight controls.

CHAPTER 6

AIRCREW 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. For example, Task 1004 is not mandatory for all flights. However, aviators must complete the performance planning card when their training and mission involve this task or when the instructor or evaluator requires it.

6-1. TASK CONTENTS

a. **Task Number and Title.** Each task is identified by a number and a title which correspond to the tasks listed in Chapter 5 (Figures 5-1 through 5-3). 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 Standardization, ATZQ-ES, Fort Rucker, AL 36362-5208 for use by other units.

NOTE: During single-pilot operations, the P* must perform the task without assistance. To avoid drift and spatial disorientation, he must use the proper scanning techniques.

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

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

d. <u>Description.</u> 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 or AO on the controls), P (pilot or AO not on the controls), PC, PI, or AO. These actions apply in all modes of flight during day, night, or NVG operations. The indications P*, P, PI, or the AO do not imply PC duties. When required, PC responsibilities are specified.

(1) <u>Individual action.</u> These actions are the portions of a crew task that an individual must accomplish. An example is the engine-start and run-up checks. The P* and the P complete these checks from their designated seat positions.

(2) <u>Crew-coordinated actions.</u> These portions of a task require the interaction of the entire crew to ensure the safe, efficient, and effective task execution. An example is a hover power check. The P* performs the takeoff to a hover and focuses his attention outside the aircraft to maintain a stationary hover. Meanwhile, the P monitors the aircraft instruments and compares actual readings with those that are predicted.

e. <u>Night or NVG Considerations.</u> Where applicable, night or NVG considerations are included.

f. <u>References.</u> 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. Simulated IMC denotes flight solely by reference to flight instruments while the aviator is wearing a hood or other similar device that restricts outside visual references.

d. Tasks requiring specialized equipment are not mandatory in aircraft that do not have the equipment installed.

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

(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--70 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.

f. The crew will not attempt the tasks listed below if the two-foot hover power check indicates that OGE power is not available.

(1) Task 1034, Perform terrain flight takeoff.

(2) Task 1035, Perform terrain flight (NOE/contour only).

(3) Task 1036, Perform hover OGE check.

(4) Task 1037, Perform NOE deceleration.

(5) Task 1038, Perform terrain flight approach.

(6) Task 1090, Perform masking and unmasking.

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 member.

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

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

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

(5) Failure of the P or other crew member 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 the other crew member.

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

(1) <u>Communicate Positively.</u> Good cockpit teamwork requires positive communication between 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 acknowledgement and/or correct action. Crew members must use positive communication procedures for 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 cockpit. 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) <u>Direct assistance.</u> 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 member. Directives are necessary when one crew member cannot reasonably be expected to know what or when assistance is needed by the other crew member. Examples are emergencies; the P*'s decision to change the sequence, timing, or priority of the P's assistance; and when a P is relatively inexperienced in the mission being flown or the flight environment. Directives normally are not needed when the assistance required is part of the crew member's assigned responsibility in the task description.

(3) **Announce actions.** To ensure effective and well-coordinated actions in the cockpit, both 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 member. Such announcements are essential when the decision or action is unexpected and calls for the supporting action from the other crew member to avoid a potentially hazardous situation.

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

(5) **Acknowledge actions.** Cockpit communications must include supportive feedback to ensure that both crew members correctly understand announcements and directives. Acknowledgements 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 acknowledgement. Figure 6-1 shows an example of positive communication.

P:	"Traffic, OH-58, 10 o'clock high, 2 km."
P*:	"Tally, traffic, OH-58, 10 o'clock high, 2 km."
P*:	"Clear to slide right?"
P:	"You are clear to slide right."
P*:	"Sliding right."
P:	"Hold."
P*:	"Holding."

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 of these terms 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."

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 flight, the P 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 obstacles clearance a primary task directive.

(b) The P 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 P/AO/AFSO will notice that the P* has let the aircraft move behind an obstacle that obstructs the line of sight to a target. The P/AO/AFSO should precede the advisory by a positive directive; for example, "Come up, losing target," "Up two feet, hold," or "Slide right, losing target." When the P* reaches the desired altitude or position, the P/AO/AFSO should announce, "Hold."

(8) **<u>Coordinate sequence and timing.</u>** Proper sequencing and timing ensures that the actions of one crew member mesh with the actions of the other crew member. An example of properly sequenced and timed actions is shown in Figure 6-3.

P*	Announces his intention to slide right before doing so.
P	Focuses his attention outside the aircraft in the direction of movement to provide adequate warning of obstacles and announces, "Clear right."
P*	Initiates lateral hover.

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

c. Crew coordination begins with battle rostering and training, proceeds through mission planning, and culminates in the effective execution of aircrew tasks. Research has shown that crew coordination 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 the rehearsal of critical mission events and contingencies.

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

(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 crew coordination procedures in the ATM task descriptions during day operations so that they develop good habits that will transfer to more critical night and NVD 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, or any other unsafe condition.

d. The P must adequately 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 crew members. It means that they will clear the immediate area in all directions during hovering and taxi operations and left, right, and overhead before and during takeoff. It also indicates that the crew members will use clearing turns to clear the area before climbing or descending.

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

6-5. STANDARD COCKPIT TERMINOLOGY

Using common terms and standard phraseology in the cockpit minimizes confusion and reduces the likelihood of misunderstanding. Crew members 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 shows a list of standard words and phrases with their meanings which all crew members should understand.

Abort--terminate a preplanned aircraft maneuver.
Affirmative--Yes.
Aircraft--aircraft you are in.
Bandit--an identified enemy aircraft.
Bogey--an unidentified aircraft assumed to be enemy.
Break--immediate action command to perform an emergency maneuver to deviate from the present ground track; will be followed by the word "right," "left," "up," or "down."
Call out--command by the pilot on the controls for a specified procedure to be read from the checklist by another crew member.
Cease fire--command to stop firing but continue to track.
Clear--no obstacle present to impede aircraft movement along the intended ground track. Will be preceded by the word "nose," "tail," or "aircraft" and followed by the direction; for example, "left," "right," or "slide left," "right." Also indicates that ground personnel are authorized to approach the aircraft.
Come up/down--command to change 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 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."
Execute--initiate an action.
Expect--anticipate further instructions or guidance.
Firing--announcement that a specific weapon is to be fired.
Fly heading--command to fly an assigned compass heading. (This term generally used in low-level or contour flight operations.)

Figure 6-4. Examples of standard words and phrases

Get out--command to make an emergency exit from the aircraft; will be repeated three times in a row.
Go ahead--proceed with your message.
Go AJ--directive to activate antijam communications.
Go green--directive to activate secure communications.
Go red--directive to discontinue secure communications.
Hold--command to maintain present position.
Inside--primary focus of attention is inside the cockpit 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.
Mickey--a Have Quick time-synchronized signal.
Monitor--command to maintain constant watch or observation.
Negative--incorrect or permission not granted.
Negative contact--unable to establish communication with... (followed by name of element).
No joy--target, traffic, or obstruction 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* 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 reduce ground speed.
Speed up--command to increase ground speed.
Spot--When used in the Air Force connotation, means laser energy being received.
Stand by--wait; duties of a higher priority are being performed and 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.
Tally--target, traffic, or obstruction positively seen or identified; will be followed by a repeat of the word "target," "traffic," or "observation" and the clock position.
Target--an alert that a ground threat 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).
Troops on/off--command to have troops enter or exit the aircraft.
Turn--command to deviate from present ground track; will be followed by the words "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.
Winchester--no ordnance remaining.

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

TASK 1000

TASK: Conduct crew mission briefing.

CONDITIONS: Prior to flight in an observation helicopter by the PC or AMC with both crew members present and given a completed DA Form 5484-R (Aircrew Mission Briefing) and a crew briefing checklist.

NOTE: A suggested crew briefing checklist is shown in Figure 6-5.

STANDARDS:

1. Without error, brief the mandatory and mission-related items detailed on DA Form 5484-R.

2. Assign crew member mission duties and responsibilities.

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

4. Have the crew member(s) acknowledge that they fully understand the assignment of duties and responsibilities.

DESCRIPTION: In performing this task, the PC/AMC must brief the mandatory items from the DA Form 5484-R and the crew briefing checklist. He must ensure that the crew collectively visualizes and rehearses the mission from takeoff to tie down. This rehearsal should include all factors of the flight, including the actions, duties, and responsibilities of each crew member. The PC or AMC will identify mission and flight requirements that will place a heavy demand on effective crew communication and the proper sequencing and timing of actions. The PC or AMC must realize that additional caution may be necessary if the crew has not flown together as a battle-rostered crew. The other crew member(s) will acknowledge that they understand assigned actions, duties, and responsibilities. The goal is to reduce, through planning, the uncertainty that arises during a mission when the crew is confronted by unexpected events.

REFERENCE:

AR 95-1

CREW BRIEFING CHECKLIST

1. DA Form 5484-R and crew briefing.
2. Required items (uniform, ID tags, publications, SOI).
3. Crew actions, duties, and responsibilities.
    a. Transfer of controls.
    b. General crew duties.
        (1) Crew member on the controls.
            (a) Fly the aircraft (primary focus outside).
            (b) Avoid traffic or obstacles.
            (c) Cross-check instrument systems.
            (d) Monitor and transmit on assigned radios.
        (2) Crew member not on the controls.
            (a) Assist in traffic and obstacle avoidance.
            (b) Operate communication/navigation systems.
            (c) Navigate.
            (d) Copy clearances and other information.
            (e) Cross-check instrument systems.
            (f) Monitor and transmit on assigned radios.
            (g) Perform other duties as assigned by the P*.
    c. Emergency procedures.
        (1) Emergency actions.
        (2) Emergency equipment (ALSE, ELT, first aid, fire equipment).
        (3) Emergency landing and ditching procedures.
            (a) Emergency transfer of controls.
            (b) Crew and passenger responsibilities.
            (c) Emergency radio transmission.
            (d) Egress procedures and rally points.
            (e) Simulated emergencies.
4. Pilot in command analysis of aircraft. Mission modification based on aircraft analysis.
5. FARP procedures.
6. Crew comments and discussion.
7. Crew member(s) acknowledgment of PC briefing.
8. Final walk around of aircraft.

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

TASK 1001

TASK: Plan a VFR flight.

CONDITIONS: Prior to flight in an observation 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 crew and aircraft are capable of completing the assigned mission.

2. Determine if the flight can be performed under VMC according to AR 95-1 and the applicable FAR/host-country and local regulations.

3. Decode NOTAMs and determine, without error, if there are any restrictions on departure, en route, and at destination.

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

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 requirement from takeoff to destination, plus fuel reserve, ±25 pounds.

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

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. **<u>Crew Actions.</u>**

a. The PC will direct the other crew member to complete some designated elements of the VFR flight planning.

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

c. Based on the information provided by the other crew member, 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. <u>Procedure.</u>

a. During VFR mission planning, ensure that all crew members are current and qualified to accomplish the mission and ascertain that the aircraft is capable of completing the mission.

b. Using FAA, USAF, or host-country weather facilities, obtain information about the weather. After ensuring that the flight can be completed under VFR, check NOTAMs for any restrictions applicable 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.

c. 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 charts in the appropriate operator's manual. Complete 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 1002

TASK: Plan an IFR flight.

CONDITIONS: Prior to IFR flight in an observation 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 according to AR 95-1.

3. Check applicable publications and determine, without error, if there are any restrictions 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 course(s) within ±5 degrees.

5. Select altitude(s) that avoid icing levels 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. Correctly determine the fuel requirement from takeoff to destination and alternate airfield (if required), plus fuel reserve, ±25 pounds.

9. Complete and, if applicable, file the flight plan according to AR 95-1 and the DOD FLIP.

10. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Crew Actions.**

a. The PC will direct the other crew member to complete some designated elements of the IFR flight planning.

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

c. Based on the information provided by the other crew member, 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.**

a. During IFR flight planning, ensure that all crew members are current and qualified to accomplish the mission and ascertain that the aircraft is capable of completing the mission.

b. Using USAF, FAA, or host-country weather facilities, obtain information about the weather. Compare the destination forecast and approach minimums, and determine if an alternate airfield is required. Ensure that the flight can be completed according to AR 95-1. Check the NOTAMs and the Army Aviation Flight Information Bulletin for any restrictions applicable 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.

c. Select the route(s) or course(s) and altitude(s) that will best facilitate mission accomplishment. When possible, select the preferred routing. Use a CPU-26A/P computer/Weems plotter (or equivalent) to plot the flight, and determine magnetic heading, ground speed, and ETE for each leg, including 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. Complete 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

TASK 1003

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

CONDITIONS: Prior to flight in an observation helicopter and given crew members' and passengers' weights, aircraft configuration, aircraft weight and balance information, aircraft operator's manual, and a blank or a prepared copy of the DD Form 365-4 (tactical or transport, as appropriate).

STANDARDS:

1. Ensure that the takeoff condition (corrected weight) does not exceed the gross weight limitation and the takeoff CG (corrected CG) is within takeoff CG limitation.

2. Ensure that the estimated landing weight does not exceed the landing gross weight limitation and the estimated landing CG is within the landing CG limitation.

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

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will compute or direct the other crew members to compute the data for completing DD Form 365-4 according to the references listed below. The PC will verify that aircraft weight and CG will remain within allowable limits for the entire flight.

2. The PC and the other crew members will confirm and acknowledge the elements of the completed DD Form 365-4.

REFERENCES:

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

TASK 1004

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

CONDITIONS: Given data from the DD Form 365-4 (Weight and Balance Clearance Form F--Tactical); aircraft operator's manual; environmental conditions at takeoff, en route, and landing; and a blank DA Form 4887-R.

STANDARDS:

1. Without error, complete the PPC according to procedures given in the aircraft operator's manual and the description below.

2. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will determine and have available aircraft performance data necessary to complete the mission. DA Form 4887-R is used as an aid to organize this information. The PC will ensure that aircraft limitations and capabilities are not exceeded. The form shown in Figures 6-6 (page 6-24) and 6-7 (page 6-25) will be used during ATP evaluations. The front of the form is used to organize departure and arrival information, and the back is used for fuel management, mission, and en route planning.

2. The most accurate performance data can be obtained by using existing conditions. If mission or time constraints preclude using these conditions, use the highest PA and temperature forecast for the time of departure. Instructions for completing the items with circled numbers in Figures 6-6 and 6-7 are given in the aircraft operator's manual and, when necessary, are supplemented by the instructions below. Items that do not have circled numbers do not pertain to the OH-58/OH-6 helicopters. Because DA Form 4887-R is used for several types of rotary-wing aircraft in the Army's inventory, some circled numbers may not be in sequence.

a. **<u>Departure.</u>**

(1) **<u>Items 1 and 2--PA.</u>**

(a) **<u>Departure PA.</u>** Record the PA forecast for the time of departure.

(b) **<u>Highest PA.</u>** Record the highest PA forecast during the mission profile.

(2) Items 3 and 4--FAT.

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

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

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

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

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

(6) Item 8--Max Torque Avail. Using the applicable maximum torque available (30-minute operation) chart, record the maximum torque available.

(7) Item 9--Cent Torque Avail. Using the applicable maximum torque available (continuous operation) chart, record the continuous torque available.

(8) Item 10--Predicted Hover Torque. Using the hover chart, record the torque required to hover at a 2-foot skid height (IGE) for anticipated takeoff conditions.

(9) Item 11--Hover OGE Torque. Using the hover chart, record the torque required to hover at a 50-foot (OH-6, 35-foot) skid height (OGE).

(l0) Items 12 and 13--Max Allowable GWT (OGE/IGE).

(a) OGE. Using the hover chart, the maximum torque available obtained in (8) above, and a 50-foot (OH-6, 35-foot) skid height, obtain the maximum allowable gross weight OGE.

(b) IGE. Using the hover chart, the maximum torque available obtained in (8) above, and a 2-foot skid height, obtain the maximum allowable gross weight IGE.

NOTE: Maximum allowable gross weight may be obtained by using the hover ceiling chart.

(11) Item 14--Max R/C or Endurance IAS. Using the applicable cruise chart, record the maximum rate of climb or maximum endurance indicated airspeed.

(12) **Item 15--Max Range IAS.** Using the applicable cruise chart, record the maximum range indicated airspeed.

(13) **Item 16--Safe Pedal Margin.** Using the hover chart and the predicted surface wind, determine if a 10 percent directional control margin exists when the wind is a 90-degree right crosswind. Check yes if a 10 percent directional control margin exists at 35 knots and above. Check no if the maximum permissible right crosswind is less than 35 knots, and record the maximum permissible right crosswind.

b. **Arrival.**

(1) **Item 17--PA.** Record the forecast PA at destination at ETA.

(2) **Item 18--FAT.** Record the forecast FAT at destination at ETA.

(3) **Item 19--Landing GWT.** Record the estimated landing gross weight.

(4) **Items 20 and 21 --Max Allowable GUT (OGE/IGE).**

(a) **OGE.** Using arrival environmental conditions, compute the maximum allowable gross weight OGE as described in a(l0)(a).

(b) **IGE.** Using arrival environmental conditions, compute the maximum allowable gross weight IGE as described in a(l0)(b).

(5) **Item 22--Max Torque Avail.** Using arrival environmental conditions, compute the maximum torque available as described in a(6).

(6) **Item 23--Hover IGE Torque.** Using arrival environmental conditions, compute hover IGE torque as described in a(8).

(7) **Item 24--Hover OGE Torque.** Using arrival environmental conditions, compute hover OGE torque as described in a(9).

(8) **Item 25--Safe Pedal Margin.** Using arrival environmental conditions, compute safe pedal margin as described in a(13).

NOTE: Arrival data must be computed anytime the load or environmental conditions increase significantly (5°C or 500 feet PA) from the departure data and the intermediate and final destination data.

c. <u>Fuel Management (Item 26).</u> Use this space to record the in-flight fuel consumption check, to include fuel burnout and the appropriate reserve. (Task 1023 discusses fuel management procedures.)

d. <u>Cruise Data.</u>

(1) <u>Item 27--PA.</u> Record planned cruise PA.

(2) <u>Item 28--FAT.</u> Record forecast FAT at cruise altitude.

(3) <u>Item 29--Vne.</u> Using the airspeed operating limits chart, record the maximum indicated airspeed for anticipated cruise conditions.

(4) <u>Items 30 and 31--Cruise Speed (IAS and TAS).</u> Using the applicable cruise chart, record the indicated and true airspeeds based on gross weight and cruise data.

(5) <u>Item 32--Cruise Torque.</u> Using the applicable cruise chart, record the torque required to maintain the airspeeds listed in (4) above.

(6) <u>Item 33--Cruise Fuel Flow.</u> Using the appropriate cruise chart, record the predicted fuel flow. (Use the torque listed in (5) above.)

e. <u>Weight Computation (Item 34).</u> Use this area to record any additional information appropriate for the mission.

f. <u>Remarks (Item 35).</u> Use this area as desired; for example, forecast surface winds or to record minimum fuel required to complete the mission.

NOTE: The same PPC data will suffice for consecutive takeoffs and landings when the load or the environmental conditions have not increased significantly; that is, 5°C or 500 feet PA.

REFERENCES:

AR 95-1
AR 95-3
FM 1-203
Aircraft operator's manual

RW PERFORMANCE PLANNING CARD

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

DEPARTURE

PA 1 2	FAT 3 4
TAKEOFF GWT 5	LOAD 6
CALIBRATION FACTOR	FUEL 7

	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX TORQUE AVAIL		8	
CONT TORQUE AVAIL		9	
GO/NO-GO TORQUE (OGE/IGE)			
PREDICTED HOVER TORQUE		10	
HOVER OGE TORQUE		11	
MAX ALLOWABLE GWT (OGE/IGE)		12 / 13	
MAX R/C OR ENDURANCE IAS			14
MAX RANGE IAS			15
SINGLE-ENG CAPABILITY IAS (MIN/MAX)			

VALIDATION FACTOR ____________________

SAFE PEDAL MARGIN 16 YES_____ NO_____

ARRIVAL

PA 17	FAT 18
LANDING GWT 19	

	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX ALLOWABLE GWT (OGE/IGE)		20 / 21	
MAX TORQUE AVAIL		22	
HOVER IGE TORQUE		23	
HOVER OGE TORQUE		24	

SAFE PEDAL MARGIN 25 YES_____ NO_____

DA FORM 4887-R, MAY 87

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

26 FUEL MANAGEMENT	
FUEL/TIME	BURNOUT ____________ Z
START ______ / ______	RESERVE ____________ Z
STOP ______ / ______	CONSUMPTION RATE ______ LB PER HR

LONGITUDINAL CYCLIC TRIM

RET VNE KIAS	PROG VNE KIAS

CRUISE DATA

PA 27	FAT 28	VNE 29 KIAS

	DUAL ENG	SINGLE ENG
CRUISE SPEED	____ IAS ____ TAS	30 IAS 31 TAS
CRUISE TORQUE		32
CRUISE FUEL FLOW		33

OPTIONAL DATA

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

REMARKS: 35

PAGE 2, DA FORM 4887-R, MAY 87

Figure 6-7. DA Form 4887-R (reverse)

TASK 1005

TASK: Perform preflight inspection.

CONDITIONS: In an observation helicopter and given the operator's and crewmember's checklist.

STANDARDS:

1. **PC/P.**

a. Without error, perform the preflight inspection, to include the weapon systems if installed, according to the operator's and crewmember's checklist.

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

2. **P/AO/AFSO.**

a. Read the checklist to the aviator in the correct sequence.

b. Without error, perform those duties directed by the aviator.

c. Correctly make the appropriate entries on the applicable logbook forms.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **PC.** Using the operator's and crewmember's checklist, verify all preflight checks. Correctly enter the appropriate information on DA Forms 2408-12 and 2408-13. Perform the crew member briefing.

2. **P/AO/AFSO.** Using the operator's and crewmember's checklist, assist the PC in verifying all prefliqht checks. Perform those checks directed by the PC as outlined in the operator's and crewmember's checklist. Record the appropriate information on the applicable logbook forms.

NIGHT OR NVG CONSIDERATIONS:

If time permits, perform the preflight inspection during daylight hours. If crew members perform the preflight inspection during the hours of darkness, they should use a flashlight with an unfiltered lens to supplement the available lighting. (Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens.)

NOTE: TC 1-204 contains details on preflight inspections at night.

REFERENCES:

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

TASK 1007

TASK: Perform engine-start, run-up, hover, and before-takeoff/landing checks and after-landing tasks.

CONDITIONS: In an observation helicopter and given the operator's and crewmember's checklist.

STANDARDS:

1. **P*.** Without error, perform procedures and checks according to the operator's and crewmember's checklist.

2. **P/AO/AFSO.**

a. Read the checklist to the aviator in the correct sequence.

b. Without error, perform procedures and checks according to the operator's and crewmember's checklist.

c. Without error, perform the duties directed by the P*.

d. Correctly make the appropriate entries on the applicable logbook forms.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*.** Start the engine according to the operator's and crewmember's checklist, and accomplish the aircraft system checks in the appropriate sequence. Ensure that the appropriate information is recorded on the applicable aircraft logbook forms.

2. **P/AO/AFSO.** In the absence of a fireguard, perform fireguard duties if required by the unit SOP. As required, accomplish the aircraft system checks in the appropriate sequence. Assist the P* by reading the checklist and adjusting any instruments or avionics as directed. When directed by the aviator, record information on applicable aircraft logbook forms.

NIGHT OR NVG CONSIDERATIONS: Before starting the engine or performing the run-up checks, the aviator must ensure that all internal and external lights are operational and properly set. Lighting levels must be high enough so that the crew can easily see the instruments and the P* can start the engine without exceeding operating limitations. The crew member not on the controls should assist in clearing the aircraft. As necessary, he should also assist in completing all required checks.

REFERENCES:

Aircraft logbook
Aircraft operator’s manual
AR 95-1
Operator's and crewmember’s checklist
Unit SOP

TASK 1011
(AO/APSO only)

TASK: Perform straight-and-level flight.

CONDITIONS: In an observation helicopter with a UT/IP/SP or a battle-rostered PC during mission or continuation training.

STANDARDS:

1. **AO/APSO.**

a. Obtain the appropriate airspeed between 60 and 80 knots, ±10 KIAS.

b. Obtain an altitude of at least 300 feet above the highest obstacle ±200 feet.

c. Maintain heading ±20 degrees.

d. Maintain aircraft in trim.

2. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. Straight-and-level flight is flight in which a constant airspeed, altitude, and direction are maintained. Upon assuming the controls, the AO/AFSO will--

a. Immediately obtain an attitude to achieve an airspeed of 60 to 80 knots and frequently cross-check the airspeed indicator for verification.

b. Choose an altitude which is at least 300 feet above the highest obstacle and maintain a constant altitude with the collective. Frequently cross-check the altimeter for verification. The frequency of collective movements will depend on the level of turbulence. When the air is smooth, fewer collective corrections are required. Maintain the selected altitude within ±200 feet. Remember to verify the trim condition of the aircraft after adjusting the collective. Once altitude and airspeed have been established, maintain aircraft heading ±20 degrees.

c. Select a reference line or point to fly toward to adjust for straight flight. Adjust the pedals to maintain trim. Make cyclic corrections to turn the aircraft, and establish the aircraft in a level attitude on a straight ground track to the reference point.

NOTE: Aligning the aircraft with a ground reference when a crosswind exists will result in drifting or uncoordinated flight. Therefore, the aircraft will need to be "crabbed" into the wind to maintain ground track to the reference point.

d. Develop a cross-check that includes scanning outside the aircraft to verify the ground track and the attitude of the aircraft. Use the flight instruments to help verify the attitude of the aircraft. Scan the instruments quickly and frequently.

2. The crew will perform crew coordination actions as required or as requested by the AO/AFSO.

NOTE: AO/AFSO night and NVG hands-on flight must be with an IP/SP.

REFERENCES:

FM 1-203
FM 1-240

TASK 1012
(AO/AFSO only)

TASK: Perform turns, climbs, and descents.

CONDITIONS: In an observation helicopter with a UT/IP/SP or a battle-rostered PC during mission or continuation training.

STANDARDS:

1. **AO/AFSO.**

a. **Turns.**

(1) Properly clear the aircraft.

(2) Maintain aircraft in trim.

(3) Maintain selected airspeed ±10 KIAS.

(4) Maintain selected bank angle ±10 degrees.

(5) Maintain altitude as directed ±200 feet.

(6) Roll out on desired heading ±20 degrees.

b. **Climbs and Descents.**

(1) Properly clear the aircraft.

(2) Maintain aircraft in trim.

(3) Maintain selected airspeed ±10 KIAS.

(4) Maintain rate of climb or descent as directed ±200 FPM.

(5) Maintain heading control ±20 degrees.

(6) Maintain angle of bank as directed ±10 degrees.

2. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **AO/AFSO.**

a. **Turns.** A turn is a maneuver used to change the direction of flight. The three types of turns are shallow

(15-degree bank), medium (30-degree bank), and steep (45-degree bank).

(1) Before beginning the turn, clear in the direction of the turn, above, below, and at your flight level. Ensure that the area is clear of any aircraft that could interfere with safe execution of the turn. Practice turns are normally done with a medium bank and involve a 90-degree change in heading unless otherwise specified. While looking to clear the area, pick out some object to use as a guide point to complete the turn.

(2) To start the turn, apply a slight pressure on the cyclic in the direction of the turn. This is the only control movement necessary to start the turn. Do not use the antitorque pedals to assist the turn. When the desired angle of bank is reached, neutralize the cyclic to stop the roll; otherwise, the bank will continue to increase. To aid in learning to feel the proper pressure, practice using a slight pressure on the cyclic and roll into the turns slowly. Maintaining a constant altitude and airspeed during the turn is important. This can best be done by holding a constant attitude using cockpit reference points and the horizon as guides. By keeping these references in the same relative position throughout the turn, a constant attitude, altitude, and airspeed will be maintained. Cross-check by occasionally glancing at the flight instruments. Continue to clear the area while turning. Throughout the turn, the angle of bank should be held constant with the cyclic, just as it was to keep the aircraft level during straight-and-level flight (Task 1011).

(3) To recover from a turn, use the cyclic the same as for an entry, except apply pressure in the opposite direction. Because the helicopter will continue to turn as long as there is any bank, start the rollout before reaching the desired heading. This allows the helicopter to turn during the time it takes to roll from the banked attitude to a level attitude. As the helicopter becomes level, the cyclic must be neutralized to prevent entering a turn in the opposite direction. Upon completion of the turn, the aircraft should be aligned with the previously selected guide point and in straight-and-level flight.

b. **<u>Climbs and Descents.</u>** A climb or descent is a maneuver to change the altitude of the aircraft while a constant airspeed and heading are maintained. Before beginning a climb or descent, clear the aircraft at your flight level for other aircraft in the vicinity. Clear above and below and to the left and right of the aircraft.

(1) To initiate a climb or descent, apply pressure on the collective to establish the desired power change. Simultaneously apply the required pedal pressure to maintain the aircraft in trim (left pedal for climbs and right pedal for descents). During the climb or descent, continue to cross-check airspeed, heading, and attitude control.

(2) To return to straight-and-level flight, lead the desired altitude by at least 50 feet. Adjust the collective to obtain the power setting for cruise flight. During power changes, adjust the trim. Continue cross-checking the flight instruments while looking for other aircraft.

2. **Crew.** Perform crew coordination actions as required or as requested by the AO/AFSO.

NOTE: AO/AFSO night and NVG hands-on flight must be with an IP/SP.

REFERENCE:

FM 1-203

TASK 1016

TASK: Perform hover power check.

CONDITIONS: In an observation helicopter with performance planning information available, at an appropriate hover height, and the aircraft cleared.

STANDARDS:

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

2. Maintain a stabilized 2-foot hover, ±1 foot, and without error, determine that sufficient power is available to complete the mission.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. Prior to ascending to a hover, the P* will announce and ensure that the aircraft is clear (left, right, and above). He will remain primarily focused outside the aircraft to maintain clearance and announce when the aircraft is stabilized at the appropriate hover height. He will perform the hover power check near the takeoff point with the aircraft heading in the direction of takeoff. He will perform the check before the first takeoff and before any takeoff when the load or environmental conditions have increased significantly (5°C or 500 feet PA).

2. The P/AO/AFSO will acknowledge when he is ready for takeoff and remain focused outside the aircraft to assist in clearing the aircraft. He will provide adequate warning of obstacles and acknowledge when the aircraft is clear (left, right, and above, as appropriate). He will announce when his attention is focused inside the cockpit; for example, to monitor torque for takeoff.

3. The P/AO/AFSO will monitor the aircraft instruments. He will announce hover torque and maximum torque available and alert the P* of the difference.

4. Depending on the torque differential, the following maneuver or task restrictions may apply.

a. **Below 5 PSI or 5 percent.** Shallow and normal approaches to large, improved landing areas and normal takeoffs may be performed. Ensure that adequate room exists for a takeoff with minimum or existing power. The destination must also allow a normal or shallower-than-normal approach to a surface which will permit a descent to the ground if necessary.

b. **<u>From 5 to less than 10 PSI or 10 percent.</u>** Normal approaches and takeoffs may be performed.

c. **<u>From 10 to less than 15 PSI or 15 percent.</u>** Steep approaches, confined area operations, pinnacle and ridgeline operations, and instrument takeoffs may be performed.

d. **<u>From 15 PSI or 15 percent or more.</u>** Maneuver or task restrictions do not apply. Those maneuvers listed in paragraph 6-2(f) requiring OGE power capability may be performed.

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

6. The P will announce when the power check is complete.

NOTE: Anytime the load or environmental conditions increase significantly (5°C or 500 feet PA), additional hover power checks must be performed. If necessary, the PC will recompute all values.

NIGHT OR NVG CONSIDERATIONS:

Use proper scanning techniques to avoid spatial disorientation.

REFERENCES:

Aircraft operator's manual
TC 1-204

TASK 1017

TASK: Perform hovering flight.

CONDITIONS:

1. **P*/P.** In an observation helicopter with the before-takeoff check completed and the aircraft cleared.

2. **AO/AFSO* (when performing P* duties).** In an observation helicopter with the before-takeoff check completed, the aircraft cleared, and with a UT/IP/SP or, during mission or continuation training, with a battle-rostered PC.

STANDARDS:

1. **P*.**

a. **Takeoff to a hover.**

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

(2) Maintain heading ±10 degrees.

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

(4) With the aid of the operator's and crewmember's checklist, perform the hover checks in the correct sequence.

b. **Hovering flight.** Maintain a constant rate of movement for existing conditions, not to exceed that of a brisk walk.

c. **Hovering turns.**

(1) Maintain a constant rate of turn.

(2) Maintain position over pivot point within 2 feet.

d. **Landing from a hover.**

(1) Maintain heading ±10 degrees.

(2) Execute a smooth and controlled descent with drift minimized at touchdown.

2. **AO/AFSO* (when performing P* duties).**

a. **Takeoff to a hover.**

(1) Establish a hover altitude of 3 feet, ±2 feet.

(2) Maintain heading ±20 degrees.

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

b. Hovering flight. Maintain a constant rate of movement for existing conditions, not to exceed that of a brisk walk.

c. Hovering turns.

(1) Maintain a constant rate of turn.

(2) Maintain position over the pivot point within 5 feet.

d. Landing from a hover.

(1) Maintain heading ±20 degrees.

(2) Execute a smooth and controlled descent with drift minimized at touchdown.

3. Crew. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will announce his intent to perform a specific hovering flight maneuver. He will ensure that the aircraft is cleared prior to any aircraft movement. He will maintain visual reference outside the aircraft, use obstacle avoidance procedures, and monitor speed. The P* will announce termination of the maneuver and direct the P/AO/AFSO to assist as necessary.

2. The P/AO/AFSO will acknowledge all announcements and instructions from the P* and assist in clearing the aircraft. He will question any deviation not announced by the P*. He will minimize the time his attention is focused inside the aircraft to aid in drift detection and obstacle avoidance. He will announce whenever his attention is focused inside the aircraft.

3. The P* will perform the following actions:

a. Takeoff to a hover. With the collective fully down, place the cyclic in a neutral position. Increase the collective with a smooth, positive pressure until the aircraft becomes light on the skids. Apply pressure and counterpressure on the pedals to ensure that the aircraft is free to ascend. While maintaining heading with the pedals, coordinate the cyclic for a vertical ascent. As the aircraft leaves the ground, check for proper control response and aircraft CG. Upon reaching the desired hover altitude, perform the initial hover check according to the operator's and crewmember's checklist.

b. Hovering flight. Adjust the cyclic to maintain a stationary hover or to move in the desired direction of flight. Maintain altitude with the collective and heading with the pedals. The rate of movement should be appropriate for existing conditions. 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, move the cyclic in the opposite direction while maintaining altitude and heading.

c. <u>Hovering turns.</u> Clear the aircraft. 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. Turns around the nose of the aircraft or the pilot's seat provide the best turn reference and awareness. However, turns other than about the mast will proportionately increase the radius of the turn.

d. <u>Landing from a hover.</u> From a stabilized hover, decrease the collective to begin a gradual descent to touchdown. Make necessary corrections with the pedals and cyclic to maintain a constant heading and position. Upon ground contact, ensure that the aircraft remains stable. Continue to smoothly and steadily decrease the collective until the entire weight of the aircraft rests on the ground. Reduce the collective to the full-down position, and neutralize the pedals and cyclic.

NOTE: Seek hover areas that provide adequate contrast, and use proper scanning techniques to avoid spatial disorientation. If disorientation occurs, apply sufficient power to execute a takeoff. If a takeoff is not feasible, attempt to maneuver the aircraft forward and down to the ground to limit the possibility of touchdown with sideward or rearward movement.

NIGHT OR NVG CONSIDERATIONS:

Determine aircraft lighting configuration prior to takeoff; for example, search or IR light position.

NOTE: AO/AFSO night and NVG hands-on flight must be with an IP/SP.

REFERENCES:

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

TASK 1018

TASK: Perform a normal takeoff.

CONDITIONS:

1. **P*/P.** In an observation helicopter with hover power and before-takeoff checks completed and the aircraft cleared.

2. **AO/AFSO* (when performing P* duties).** In an observation helicopter with the hover power and before-takeoff checks completed, the aircraft cleared, and with a UT/IP/SP or, during mission or continuation training, with a battle-rostered PC.

STANDARDS:

1. **P*.**

a. Initiate takeoff from an appropriate hover altitude ±1 foot when taking off from a hover.

b. Maintain takeoff heading ±10 degrees.

c. Maintain ground track alignment with takeoff direction with minimum drift.

d. Maintain aircraft in trim above 50 feet AGL.

e. Accelerate to the desired airspeed ±10 knots.

f. Maintain rate of climb ±100 FPM.

2. **AO/AFSO* (when performing P* duties).**

a. Maintain heading control and ground track within ±20 degrees.

b. Maintain the appropriate airspeed ±15 KIAS.

c. Maintain the appropriate rate of climb ±200 FPM.

d. Level off at the proper altitude +200 feet, -100 feet.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily outside the aircraft to provide obstacle clearance throughout the maneuver. He will

announce whether the takeoff is from the ground or from a hover and his intention to abort or alter the takeoff. He will ensure that the aircraft is cleared prior to any movement.

2. The P/AO/AFSO will announce when the before-takeoff check is complete and the aircraft is ready for takeoff. He will maintain visual reference outside the aircraft to provide adequate warning of obstacle and/or hazards in the flight path. The P/AO/AFSO will also announce when his attention is focused inside the aircraft.

3. The P* will perform the following actions:

a. **From the ground.** Select reference points to maintain ground track. With the cyclic in the neutral position, increase the collective until the aircraft becomes "light on the skids." Apply pressure and counterpressure to the pedals to ensure that the aircraft is free to ascend. While maintaining heading with the pedals, continue increasing the collective until the aircraft leaves the ground. As the aircraft leaves the ground, adjust the cyclic as required to accelerate through ETL at an altitude that is appropriate for the terrain and to avoid obstacles. As the aircraft reaches ETL, adjust the cyclic to obtain the desired climb attitude (approximately 60 KIAS) and to maintain ground track. Position the collective to establish the desired rate of climb (approximately 500 FPM), and use the pedals to maintain heading aligned with ground track below 50 feet AGL and in trim above 50 feet AGL.

b. **From a hover.** Select reference points to maintain ground track. Apply forward cyclic to accelerate the aircraft while maintaining heading with the pedals and altitude with the collective. Continue to apply forward cyclic as required to accelerate through ETL at an altitude that is appropriate to clear the terrain and to avoid obstacles. Perform the rest of the maneuver as for a takeoff from the ground.

NOTE 1: During training, a climb of 60 KIAS and a rate of climb of 500 FPM are recommended.

NOTE 2: When performing this maneuver from a confined area, repositioning the aircraft downwind will minimize the power requirements for takeoff.

NIGHT OR NVG CONSIDERATIONS:

1. If sufficient illumination exists to view obstacles, the P* can perform the takeoff in the same manner as he does a normal takeoff during the day. If sufficient illumination does not exist to view obstacles, he should perform an altitude-over-airspeed takeoff until the aircraft passes through an altitude that will ensure obstacle clearance. The takeoff may be performed from a hover or from the ground.

2. If more than hover power is used for takeoff, maintain that power setting until approximately 10 knots before climb airspeed is reached. Then adjust power as required to establish the desired rate of climb and airspeed. Instruments should be cross-checked by the P/AO/AFSO.

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

4. Proper scanning techniques are necessary to avoid spatial disorientation.

NOTE 1: Visual obstacles, such as shadows, should be treated the same as physical obstacles.

NOTE 2: AO/AFSO night and NVG hands-on flight must be with an IP/SP.

REFERENCES:

Aircraft operator's manual
FM 1-202
FM 1-203
TC 1-204
Unit SOP

TASK 1022

TASK: Perform traffic pattern flight.

CONDITIONS: In an observation helicopter; given altitudes, airspeeds, traffic pattern headings, and ground track; and with the aircraft cleared.

STANDARDS:

1. Maintain rate of climb or descent ±100 FPM.

2. Roll out on desired heading ±10 degrees.

3. Maintain the aircraft in trim.

4. Maintain airspeed ±10 KIAS. (With NVG, the recommended maximum airspeed is 100 KIAS.)

5. Maintain altitude ±100 feet. (With NVG, the maximum traffic pattern altitude is 200 feet AHO or as directed by local airspace management.)

6. Maintain ground track alignment with minimum drift.

7. Without error, complete the before-landing check according to the operator's and crewmember's checklist.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will remain focused primarily 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/AO/AFSO will assist in clearing the aircraft in the traffic pattern and will provide adequate warning of traffic and obstacles. He will announce when his attention is focused inside the aircraft; for example, when calling out the before-landing check.

3. The P* will perform the following actions:

a. Maneuver the aircraft 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. A straight-in or base-leg entry may be used if approved by ATC. On downwind, the P/AO/AFSO will complete the before-landing checks as directed by P*. Prior to turning base, reduce power and airspeed and initiate a descent. If performing a straight-in or a base-leg entry, reduce airspeed at a point comparable to that for a VMC approach. Turn base and final legs, as appropriate, to maintain the desired ground track. Execute the desired approach.

b. For a closed traffic pattern after takeoff, climb straight ahead at climb airspeed to the appropriate altitude, turn to crosswind, and continue the climb. Initiate the turn to downwind, as required, to maintain the desired ground track. Adjust power and attitude, as required, to maintain traffic pattern altitude and airspeed.

NOTE: During training, the recommended airspeed is 60 KIAS on crosswind and base legs and 80 KIAS on the downwind leg. The maximum recommended bank is 30 degrees.

NIGHT OR NVG CONSIDERATIONS:

The crew member on the controls should maintain orientation on the landing area and concentrate on obstacle avoidance. The crew member not on the controls should make all internal checks.

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 an observation helicopter with an air navigational computer or a manual calculator.

STANDARDS:

1. **PC.**

a. Verify that the required quantity of fuel is on board at the time of takeoff.

b. Correctly complete an in-flight fuel consumption check 30 to 60 minutes after level-off or entry into mission profile. (The OH-6 PC will initiate an in-flight fuel consumption check 30 minutes after takeoff.)

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

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

2. **P/AO/AFSO.**

a. When requested by the PC, verify that the required fuel quantity is on board at the time of takeoff and correctly perform an in-flight fuel consumption check.

b. Inform the PC of the predicted burnout time and the reserve entry time.

c. Inform the PC, without delay, if information derived from the in-flight checks dictates an appropriate course of action.

d. Frequently monitor the fuel quantity and consumption rate during the flight, and update the PC on the burnout time and the reserve entry time.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **PC.**

a. **Before-takeoff fuel check.** Determine the total fuel on board, and compare it with the 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 the aircraft has leveled off or entered mission profile and the appropriate power is set, record the total fuel quantity and time of reading. (In the OH-6, begin the initial airborne fuel reading 30 minutes after takeoff.)

c. Fuel consumption check. With the aircraft in mission/cruise profile, record the remaining fuel and the time of reading 30 to 60 minutes after performing 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 fuel quantity is inadequate, initiate an alternate course of action. (In the OH-6, complete the fuel consumption check 60 minutes after takeoff.)

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

2. P/AO/AFSO.

a. Before-takeoff check. Determine the total fuel on board, and compare it with the mission fuel requirements determined during premission planning. If the fuel quantity is inadequate, inform the PC.

b. Initial airborne fuel reading. After the aircraft has leveled off or entered mission profile and the appropriate power is set and verified with the PC, record the total fuel quantity and the time of reading. (In the OH-6, begin the initial airborne fuel reading 30 minutes after takeoff.)

c. Fuel consumption check. With the aircraft in mission/cruise profile, record the remaining fuel and time of reading 30 to 60 minutes (60 minutes for the OH-6) after performing the initial airborne 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 fuel quantity is inadequate, inform the PC so he can initiate an appropriate 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 the computed values, repeat the fuel consumption check to determine if the fuel quantity is adequate to complete the flight. Update the PC on the burnout and reserve entry times.

NIGHT OR NVG CONSIDERATIONS:

The crew member not on the controls must complete all duties associated with fuel management procedures. If the controls are transferred, the other crew member will verify fuel computations.

REFERENCES:

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

TASK 1024

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

CONDITIONS: In an observation helicopter or orally or under actual or simulated NVG conditions and given an oral or a visual cue that the NVG have failed.

STANDARDS:

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

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

3. Correctly perform crew coordination actions.

DESCRIPTION: Impending NVG failure may be indicated by illumination of the 30-minute low-voltage warning indicator. NVG failure may also may be indicated if one or both tubes flicker or go blank.

a. <u>P*.</u> If the NVG fail, perform one of the following procedures, as applicable:

(1) During terrain flight with a P--

(a) Immediately announce "goggle failure" and begin a climb at a rate that will ensure obstacle avoidance.

(b) Transfer the flight controls.

(c) Attempt to restore NVG power.

(d) If NVG power is restored, continue the mission. If it is not restored, lock the NVG in the up position and revise or abort the mission.

(2) During terrain flight with an AO/AFSO--

(a) Immediately announce "goggle failure" and begin a climb at a rate that will ensure obstacle avoidance.

(b) Look underneath the goggles and use aircraft lighting as appropriate to make the transition to unaided night flight. Once a safe altitude has been attained, attempt to restore NVG power.

(c) If NVG power is restored, continue the mission. If power is not restored, lock the NVG in the up position and revise or abort the mission.

(3) If the aircraft is above terrain flight altitude, proceed as described in (1) or (2) above; however, a climb is not required.

b. **<u>P/AO/AFSO.</u>** If the NVG fail, perform the following procedure:

(1) Immediately announce "goggle failure."

(2) Attempt to restore NVG power.

(3) Advise the P* of restored vision or of continued failure.

NOTE: NVG tube failure is infrequent and is usually preceded by ample warning. Only occasionally will a tube fail completely in a short time, and rarely will both tubes fail at the same time. In-flight NVG tube failure has no remedy.

REFERENCES:

Aircraft operator's manual
TC 1-204

TASK 1025

TASK: Navigate by pilotage and dead reckoning.

CONDITIONS: In an observation helicopter and given the appropriate maps, plotter, computer, and flight log.

STANDARDS:

1. Maintain orientation within 500 meters.

2. Arrive at checkpoints ±3 minutes of ETA.

3. Navigate to the final destination within 100 meters.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. PC/P.

a. After obtaining current weather forecasts, plan the flight by marking the route and the appropriate checkpoints. Compute the time, distance, and heading for each leg of the flight route.

b. During the flight, use both pilotage and dead reckoning to maintain the position of the aircraft. Perform a ground speed check as soon as possible by computing the actual time required to fly a known distance. If practicable, adjust the airspeed as required to achieve the desired ground speed. Emphasis should be on arriving at the checkpoints and the objective at the planned times. If this is impracticable because of insufficient power or other restrictions, adjust the estimated times for subsequent legs of the route using actual ground speed. Determine the wind drift correction, if necessary, so that ground speed and heading can be computed for flight on the remaining legs. Make heading corrections to maintain the desired course (ground track).

2. P/AO/AFSO.

a. Assist the PC in obtaining weather forecasts and planning the flight. Mark the route and the appropriate checkpoints; and compute the time, distance, and heading for each leg of the flight route.

b. During the flight, use both pilotage and dead reckoning to assist the P* in maintaining the position of the aircraft. Perform a ground speed check as soon as possible by computing the actual time required to fly a known distance. If practicable, adjust the airspeed as required to achieve the desired ground speed. Emphasis should be on arriving at the checkpoints and the objective at the planned times. If this is impracticable because of insufficient power or other restrictions, adjust the estimated times for subsequent legs of the route using actual ground speed. Determine the wind drift correction, if necessary, so that ground speed and heading can be computed for flight on the remaining legs. Inform the P* of the required adjustments 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, at night, or under NVG. TC 1-204 contains details about night and NVG navigation.

REFERENCES:

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

TASK 1028

TASK: Perform VMC approach.

CONDITIONS:

1. **P*/P.** In an observation helicopter with the before-landing check completed.

2. **AO/AFSO* (when performing P* duties.)** In an observation helicopter with the before-landing check completed and with a UT/IP/SP or, during mission or continuation training, with a battle-rostered PC.

STANDARDS:

1. **P*.**

a. Perform a landing area reconnaissance, and select a suitable landing area.

b. Establish the proper altitude to clear obstacles on final approach, and maintain altitude ±100 feet.

c. Establish entry airspeed ±10 KIAS.

d. Maintain heading control and ground track alignment with landing direction ±10 degrees.

e. Maintain a constant approach angle to clear. obstacles.

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.

2. **AO/AFSO* (when performing P* duties.)**

a. Select a suitable landing area.

b. Establish the proper altitude to clear obstacles on final approach, and maintain altitude ±200 feet.

c. Establish entry airspeed ±15 KIAS.

d. Maintain heading control and ground track alignment with landing direction ±20 degrees.

e. Maintain a constant approach angle to clear obstacles.

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.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **To a Hover.** The crew will perform a landing area reconnaissance by evaluating the overall suitability of the landing area. The crew will also identify the long axis, obstacles, and estimate the effects of the wind. The P* will determine an approach angle that allows obstacle clearance to arrive at the intended landing area. If the landing area is a confined area, landing to the forward one-third will minimize power requirements. Once the approach angle is intercepted (on base or final), the P* will adjust the collective as necessary to establish and maintain the angle. He will maintain entry airspeed until the apparent ground speed and rate of closure appear to be increasing. He will progressively decrease the rate of descent and the rate of closure until the appropriate hover is established over the intended termination point. When the aircraft is above 50 feet AGL, the P* will maintain ground track alignment with the landing direction by maintaining the aircraft in trim. When the aircraft is below 50 feet AGL, he will maintain ground track alignment by aligning the aircraft with the landing direction.

2. **To the Ground.** For an approach to the ground, the P* will proceed as in an approach to a hover, except he continues the descent to the ground. He will make the touchdown with minimum ground movement or to a run-on landing. The touchdown speed may vary from above, at, or below ETL as dictated by the landing area, conditions, aircraft loading, and emergencies. After ground contact, the P* will ensure that the aircraft remains stable. He then smoothly reduces the collective to the full-down position and neutralizes the pedals and the cyclic.

NOTE 1: The decision to terminate at a hover, to the ground with zero forward speed, or with a run-on landing will depend on the aircraft load, environmental conditions, and surface conditions at the landing area. A go-around should be made before descending below obstacles, decelerating below ETL, or if visual contact with the touchdown point is lost on final.

NOTE 2: If at anytime during the approach, the P* loses visual contact or it becomes apparent he will lose visual contact with the intended landing area, he will inform the P/AO/AFSO and request assistance. (The P* may lose visual contact because of weather or environmental conditions such as blowing dust or snow.) If the P still has the intended landing area in sight, he will take the controls and complete the approach. If the P/AO/AFSO does not have the intended landing area in sight, the P* will perform a go-around.

NOTE 3: Task 1016 contains the power requirements for confined area or steep VMC approaches.

NOTE 4: FM 1-202 contains the procedures for reducing the hazards associated with the loss of visual references during landings.

NOTE 5: For training, the recommended entry airspeed is 60 KIAS.

NOTE 6: When run-on landings are being performed during AO/AFSO emergency aircraft handling procedures, a UT/IP/SP is required at one set of the flight controls.

NIGHT OR NVG CONSIDERATIONS: Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. To avoid abrupt attitude changes at low altitudes, the rate of descent during the final 100 feet should be slightly slower than during the day. After the descent is established, airspeed may be reduced to approximately 40 to 45 knots until the apparent ground speed and rate of closure appear to be increasing. Progressively decrease the rate of descent and forward speed until termination. Be aware that surrounding terrain or vegetation may decrease contrast and cause a degradation of depth perception during the approach to the landing area. Before descending below obstacles, determine the need for artificial lighting.

NOTE 1: During unaided night or NVG flight, the rate of descent at touchdown must not exceed 300 FPM.

NOTE 2: AO/AFSO night and NVG hands-on flight must be with an IP/SP.

REFERENCES:

FM 1-202
FM 1-203
TC 1-201
TC 1-204
Unit SOP

TASK 1032

TASK: Perform slope operations.

CONDITIONS: In an observation helicopter with the aircraft cleared.

STANDARDS:

1. Maintain the desired heading to slope ±10 degrees.

2. Do not exceed a 1-foot drift before and allow no drift after the skids contact the ground.

3. Execute a smooth, controlled descent and touchdown.

4. Execute a smooth, controlled ascent.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will announce his intent to perform slope operations. He will also announce that he is initiating the landing and his intended landing area. The P* will select a landing area for slope operations that will not exceed the limitations of the aircraft. He will establish the aircraft cross slope, upslope, or downslope and reduce the collective until the upslope skid(s) contact the ground. To maintain the position of the upslope skid(s) until they are firmly on the ground, the P* will continue to reduce the collective and simultaneously apply cyclic into the slope. When the collective is fully down, he will neutralize the pedals and the cyclic. If cyclic limitations are reached, mast bumping occurs, or the aircraft begins to slide downslope before the skids are firmly on the ground, the P* will return to a hover.

2. To takeoff, the P* will announce his intent and direct his attention outside the aircraft. He will apply cyclic into the slope to maintain the position of the upslope skid(s). The P* will increase the collective to raise the downslope skid(s), maintain the heading with the pedals, coordinate the cyclic until the aircraft is level, and slowly ascend to a hover. The P* will direct the P/AO/AFSO to assist as necessary.

3. The P/AO/AFSO will acknowledge all announcements and instructions from the P* and assist in clearing the aircraft. He will provide adequate warning of obstacles and unusual drift or attitude changes and question any deviation not announced by the P*. To aid in drift detection and obstacle avoidance, the

P/AO/AFSO must minimize the time he focuses inside the aircraft and announce when his attention is focused inside the aircraft.

NOTE 1: Before conducting slope operations, the crew must understand the characteristics of dynamic rollover.

NOTE 2: The P* should be aware of the common tendency to become tense and overcontrol the aircraft while performing slope operations.

NIGHT OR NVG CONSIDERATIONS: When conducting slope operations, select reference points to determine slope angles. References may be limited and difficult to ascertain. If successful completion of the landing is doubtful, abort the maneuver.

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

TASK 1033

TASK: Perform terrain flight mission planning.

CONDITIONS: Prior to flight in an observation helicopter and given a mission briefing, navigational maps, navigational computer, and other materials as required.

STANDARDS:

1. **PC/P.**

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 member briefing.

2. **P/AO/AFSO.**

a. Assist the PC in performing a map or photo reconnaissance.

b. Correctly plot the primary and alternate routes, waypoints, checkpoints, and known hazards to flight, including enemy and friendly positions.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **PC.** The PC will direct other crew members to complete designated elements of terrain flight mission planning. He will conduct a thorough crew member briefing on all aspects of the mission.

2. **Crew.** The crew will analyze the mission according to the factors of METT-T. It will assess the terrain, weather, mission requirements, and enemy and friendly situations and determine the primary and alternate routes, terrain flight modes, and movement techniques. The crew will verify time, distance, and fuel requirements and ensure that the map or overlay being used provides enough information to complete the mission. The crew

will review contingency procedures such as downed-pilot pickup points, lost communications, inadvertent IMC, and rally points.

3. **<u>P/AO/AFSO.</u>** After receiving the mission briefing, the P/AO/AFSO will assist the PC in analyzing the enemy and friendly situation and the current and forecast meteorological conditions. He will also assist the PC in conducting the map or photo reconnaissance. The P/AO/AFSO will prepare a map with the required information, to include the primary and alternate routes, the time and distance tick marks, the checkpoints, and hazards to flight. He will compute required data such as the ground track and magnetic heading and complete the flight planning by listing all the necessary data on the flight log. The P/AO/AFSO will ensure that the map is properly folded for ease of handling in the aircraft.

NIGHT OR NVG CONSIDERATIONS: More detailed flight planning is required when the flight is conducted in reduced visibility, at night, or under NVG. TC 1-204 contains details about night and NVG navigation. (Refer to airspeed and altitude restrictions, paragraph 6-2e, when selecting modes of flight.)

REFERENCES:

FM 1-112
FM 1-116
FM 1-203
TC 1-201
TC 1-204
Unit SOP

TASK 1034

TASK: Perform terrain flight takeoff.

CONDITIONS: In an observation helicopter with hover power and before-takeoff checks completed and the aircraft cleared.

STANDARDS:

1. Maintain takeoff heading ±10 degrees.

2. Maintain takeoff flight path until clear of obstacles.

3. Maintain power as required to clear obstacles safely while not exceeding aircraft limitations.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew will determine the takeoff direction by analyzing the tactical situation, wind, long axis of the takeoff area, and the lowest obstacles. The crew will select reference points to assist in maintaining the takeoff flight path.

2. The P* will remain focused primarily outside the aircraft during the maneuver. He will direct the other crew member to maintain visual reference outside the aircraft to assist in clearing the aircraft and announce his intent to take off. He will ensure that the aircraft is cleared and select reference points to assist in maintaining takeoff flight path. The P* will announce that he is initiating the takeoff and whether the takeoff is from the ground or from a hover. He will also announce his intentions to abort or alter the takeoff. He will coordinate the collective and cyclic controls as necessary to establish a climb angle that will clear any obstacles in the takeoff path. The P* will maintain heading with the pedals and, once he clears the obstacles, he will smoothly adjust the flight controls to transition to the terrain flight mode (NOE, contour, or low level).

3. The P/AO/AFSO will maintain visual reference outside the aircraft, acknowledge that he is ready for takeoff, provide adequate warning of any obstacles or hazards in the flight path, and announce whether his attention is focused inside the aircraft.

NOTE 1: Hover OGE power is required for terrain flight takeoffs.

NOTE 2: When this maneuver is performed from a confined area, repositioning the aircraft downwind will minimize the power requirements on takeoff.

NIGHT OR NVG CONSIDERATIONS:

1. Before the aircraft leaves the ground, determine if artificial lighting is required.

2. Treat visual obstacles, such as shadows, the same as physical obstacles.

3. Maintain proper scanning techniques to avoid becoming spatially disoriented.

4. In the absence of obstacles, perform a normal takeoff as described in Task 1018. If sufficient illumination does not exist to view obstacles, an altitude-over-airspeed takeoff should be performed.

REFERENCES:

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

TASK 1035

TASK: Perform terrain flight.

CONDITIONS: In an observation helicopter and given a mission briefing and the required maps and materials.

STANDARDS:

1. **P*.**

a. During NOE flight--

(1) Fly as close to the earth's surface as vegetation, obstacles, visibility, and ambient light will permit.

(2) Maintain airspeed appropriate for the terrain, weather, visibility, and ambient light.

b. During contour flight--

(1) Maintain a safe obstacle clearance altitude while generally conforming to the contours of the earth.

(2) Maintain airspeed appropriate for the terrain, enemy situation, weather, visibility, and ambient light.

(3) Maintain aircraft in trim.

c. During low-level flight--

(1) Maintain altitude ±100 feet.

(2) Maintain airspeed ±10 KIAS.

(3) Maintain aircraft in trim.

2. **P/AO/AFSO.**

a. During NOE flight--

(1) Know the en route location within 200 meters (500 meters for NVG).

(2) Identify all checkpoints without error.

(3) Locate the final objective within 100 meters.

b. During contour or low-level flight--

(1) Know the en route location within 500 meters (1,000 meters for NVG).

(2) Identify all checkpoints without error.

(3) Locate the final objective within 100 meters.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*.** Use the correct mode of terrain flight (NOE, contour, low-level, or a combination) to accomplish the mission. See FM 1-400 and TC 1-201 for a description of terrain flight modes.

2. **P/AO/AFSO.** During the flight, use selected terrain features and dead reckoning, if appropriate, to navigate accurately to the objective. Do not rely on man-made features as a primary means of navigation. Perform a ground speed check, if appropriate, as soon as possible, then adjust the airspeed or the estimated time en route for subsequent legs. Advise the P* of all checkpoints or air control points and any known hazards along the flight route. Also inform the P* of heading corrections necessary to maintain the desired course/route. Use all available terrain for cover and concealment, and look far enough ahead of the aircraft to avoid unexpected obstacles or hazards.

NOTE 1: If the area permits, navigate at least 20 kilometers during NOE flight training or 40 kilometers during contour or low-level flight training.

NOTE 2: Hover OGE power is required for NOE or contour flight.

NIGHT OR NVG CONSIDERATIONS:

1. More detailed flight planning is required when visibility is reduced, at night, or under NVG. TC 1-204 contains details about night and NVG navigation.

2. Proper scanning techniques must be used to ensure obstacle avoidance.

3. Airspeed and altitude limitations contained in TC 1-210 must not be exceeded.

REFERENCES:

FM 1-203
FM 1-240

FM 1-400
FM 21-26
TC 1-201
TC 1-204
TC 1-210

TASK 1036

TASK: Perform hover OGE check.

CONDITIONS: In an observation helicopter with OGE hover power available and the aircraft cleared and headed into the wind.

STANDARDS:

1. Do not allow drift to exceed 10 feet.

2. Maintain heading ±10 degrees.

3. Establish a hover altitude of 50 feet (35 feet in an OH-6), ±10 feet, or above surrounding obstacles, whichever is higher.

4. Maintain a constant rate of turn while performing the required 360-degree left pedal turn.

5. Correctly determine if aircraft power and controllability are sufficient.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will apply sufficient collective to ascend to 50 feet (35 feet in an OH-6) or above surrounding obstacles, whichever is higher. He will execute a 360-degree left pedal turn while constantly checking aircraft power and controllability. He will not exceed aircraft limitations. The P* will terminate the maneuver at an IGE hover, on the ground, or as required.

2. The P/AO/AFSO will monitor TOT, torque, and aircraft instruments. He will assist the P* in clearing the aircraft and monitoring drift.

NOTE 1: An OGE check should be made any time aircraft controllability or power is in doubt.

NOTE 2: OGE power is required for the performance of this maneuver.

NIGHT OR NVG CONSIDERATIONS: If possible, select an area with good ground contrast and several reference points that are of the same height or higher than the OGE hover. Under NVG, this procedure helps in maintaining a constant altitude and position over the ground during turns.

REFERENCES:

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

TASK 1037

TASK: Perform NOE deceleration.

CONDITIONS: In an observation helicopter with the hover power check completed.

STANDARDS:

1. Maintain heading alignment with the selected flight path ±10 degrees.

2. Maintain tail rotor clear of all obstacles.

3. Decelerate to the desired airspeed or to a full stop at the selected location ±50 feet.

4. Maintain safe obstacle clearance.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will initially increase the collective to maintain the altitude of the tail rotor. (When the maneuver is initiated at higher airspeeds, the need to initially increase the collective is reduced.) The P* will consider variations in terrain and obstacles when determining tail rotor clearance. While adjusting the collective to maintain the altitude of the tail rotor, the P* will apply aft cyclic to slow to the desired airspeed or to bring the aircraft to a full stop. He will maintain heading with the pedals and make all control movements smoothly. Changing the attitude of the aircraft too much or too abruptly, makes returning the aircraft to a level attitude difficult and could result in over-controlling.

2. The P/AO/AFSO will assist the P* in clearing the aircraft, minimizing drift, and monitoring aircraft instruments.

NOTE 1: Hover OGE power is required for NOE decelerations.

NOTE 2: Performing NOE decelerations downwind may result in insufficient tail rotor control and power to maintain altitude.

NIGHT OR NVG CONSIDERATIONS: Maintain proper scanning techniques to ensure obstacle avoidance and tail rotor clearance.

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

TASK 1038

TASK: Perform terrain flight approach.

CONDITIONS: In an observation helicopter with the before-landing check completed.

STANDARDS:

1. Perform a landing area reconnaissance and select a suitable landing area.

2. Maintain a constant approach angle to clear obstacles.

3. Maintain ground track aligned with the selected approach path with minimum drift.

4. Maintain the appropriate rate of closure.

5. Make a smooth, controlled termination at the intended landing area.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew will determine the landing direction by analyzing the tactical situation, wind, long axis of the landing area, and the lowest obstacles.

2. The P* will maintain visual reference outside the aircraft throughout the approach and landing (to include the go-around, if required). He will direct the P/AO/AFSO to maintain visual reference outside the aircraft to assist in clearing and announce his intent to land, abort, or alter the approach. (If the landing area is a confined area, landing to the forward one-third will minimize the power requirements.) The P* will maneuver the aircraft as required (straight-in or circle) to intercept the desired approach path. He will adjust the flight path and airspeed as necessary and maintain orientation of the landing area. The P* will announce that he is beginning the approach when he intercepts an angle that assures obstacle clearance. He will announce if the approach will terminate to a hover or to the ground, his intended landing area, and any deviation to the approach. He will coordinate the collective and cyclic as necessary to maintain the approach angle, ensure obstacle clearance, and control the rate of closure.

3. The P/AO/AFSO will remain focused outside the aircraft and confirm suitability of the area. He will announce adequate warning to avoid obstacles or hazards detected in the flight path or identified on the map. The P/AO/AFSO will also announce if his attention is focused inside the aircraft. If a go-around is required, the P/AO/AFSO will focus outside the aircraft to assist in obstacle avoidance, unless he must focus inside to monitor the aircraft instruments.

4. The decision to terminate at a hover, to the ground with zero forward speed, or with a run-on landing will depend on aircraft loading, environmental conditions, and surface conditions at the landing area. A go-around should be made before descending below obstacles or decelerating below ETL or when visual contact with the approach point is lost on final.

NOTE 1: If at anytime during the approach the P* loses visual contact or it becomes apparent he will lose visual contact with the intended landing area, he will inform the P/AO/AFSO and request assistance. If the P still has the intended landing area in sight, he will take the controls and complete the approach. If the P/AO/AFSO does not have the intended landing area in sight, the P* will perform a go-around.

NOTE 2: Hover OGE power is required prior to a terrain flight approach.

NOTE 3: Movement over areas of limited contrast, such as tall grass, water, or desert, tends to cause spatial disorientation. Seek hover areas that provide adequate contrast. If disorientation occurs, apply sufficient power and execute an instrument takeoff. If a takeoff is not feasible, attempt to maneuver the aircraft forward and down to the ground to limit the possibility of touchdown with sideward or rearward movement.

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

NIGHT OR NVG CONSIDERATIONS: Proper scanning techniques are necessary to avoid spatial disorientation. Before descending below obstacles, determine the need for artificial lighting.

REFERENCES:

Aircraft operator's manual
FM 1-202
FM 1-203
TC 1-201
TC 1-204

TASK 1050

TASK: Perform hovering autorotation.

CONDITIONS: In an observation helicopter with an IP, in an approved touchdown area, and with the aircraft headed into the wind.

STANDARDS:

1. Establish an entry altitude of 3 feet, ±1 foot.

2. Maintain heading ±10 degrees.

3. Maintain position over ground ±1 foot.

4. Execute a smooth, controlled descent and touchdown.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. From a stabilized 3-foot hover, the P* will retard the throttle to engine idle stop. He will simultaneously apply the right pedal to maintain heading and adjust the cyclic to maintain the position of the aircraft over the ground. (The P* will neither raise nor lower the collective as he retards the throttle.) As the helicopter settles, he will apply sufficient collective to make a smooth descent and touchdown and be alert for lateral or rearward drift. The descent will not be stopped by overapplying the collective. When the helicopter is resting firmly on the ground, the P* will smoothly lower the collective to the full-down position while simultaneously neutralizing the pedals and the cyclic.

2. The crew member not on the controls will monitor aircraft drift and obstacle clearance and advise the P* if any unsafe condition develops.

NIGHT OR NVG CONSIDERATIONS:

1. This is an NVG-prohibited training task.

2. At night, proper scanning techniques are necessary to avoid spatial disorientation. Orient on areas of good contrast to help maintain the position of the aircraft over the ground.

3. Determine the need for the landing/search light before this maneuver is performed.

REFERENCES:

Aircraft operator's manual
FM 1-203

TASK 1052

TASK: Perform simulated engine failure, IGE hover.

CONDITIONS: In an observation helicopter with an IP and in a locally approved touchdown area at a hover altitude that does not exceed 5 feet.

STANDARDS:

1. Recognize the emergency, determine the appropriate corrective action, and perform, from memory, all immediate action procedures described in the aircraft operator's manual and this task description.

2. Maintain heading ±10 degrees.

3. Do not allow lateral drift to exceed 1 foot.

4. Do not allow any rearward drift during descent.

5. Execute a smooth, controlled descent and touchdown.

6. Correctly perform crew coordination actions.

DESCRIPTION: 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 attain a landing attitude. He will not attempt to stop forward movement before the helicopter touches down. As the helicopter settles, he will apply sufficient collective to make a smooth descent and touchdown. When the helicopter is resting firmly on the ground, the P* will smoothly lower the collective to the full-down position while neutralizing the pedals and the cyclic.

NOTE 1: The aircraft operator's manual contains details about procedures outlined in the operator's and crewmember's checklist.

NOTE 2: All simulated engine failures will be initiated by the IP using a throttle reduction. When AR 95-1 requires that the maneuver be announced by the IP, the phrase, "hovering auto," will be called out at the same time that the throttle is reduced.

NIGHT OR NVG CONSIDERATIONS: This is an NVG-prohibited training task.

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 an observation helicopter with an IP/IE and termination as directed.

STANDARDS:

1. Recognize the emergency, determine the appropriate corrective action, and perform or simulate as required, from memory, all immediate action procedures described in the operator's manual.

2. Select a suitable landing area.

3. Correctly terminate the maneuver as directed by the IP/IE.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The IP/IE will initiate the maneuver with a throttle reduction and 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 simultaneously adjusting the pedals to trim the aircraft. After selecting a suitable landing area, the P* will use turns and vary the airspeed (between minimum rate of descent and maximum glide), as necessary, to maneuver the aircraft for a safe landing at the intended landing area. The final approach should be generally into the wind. The P* will call out rotor RPM, gas producer, and aircraft in trim. He will simulate setting the transponder to EMERGENCY and making a Mayday call to the appropriate agency. The P* will complete or simulate emergency procedures outlined in the operator's and crewmember's checklist. Each forced landing should be planned to continue to the ground. Before reaching 400 feet AGL with the aircraft in a safe autorotative profile, the IP will state, "Power recovery," "Terminate with power," or "Touchdown." (Emergency procedure training criteria outlined in AR 95-1 must be met before performing touchdown autorotations.)

a. <u>Power recovery.</u> Upon receiving the command, "Power recovery," the P* will immediately establish normal operating RPM by smoothly applying the throttle to full open. He will adjust the collective as necessary while simultaneously maintaining trim with the pedals. When he regains operating RPM, the P* will apply sufficient collective to establish a normal climb and complete the recovery prior to reaching 200 feet AGL.

b. Terminate with power. Upon receiving the command, "Terminate with power," the P* will continue the autorotative descent. Before reaching 100 feet, he will establish normal operating RPM, adjust the collective as necessary, trim the aircraft with the pedals, and maintain autorotation. At approximately 50 feet AGL, the P* will apply aft cyclic to initiate a smooth, progressive deceleration. He will maintain aircraft alignment with the touchdown area by properly applying the pedals and-the cyclic. He will adjust the collective, if required, to prevent excessive rotor RPM. At approximately 10 feet AGL, the P* will apply sufficient collective to control the rate of descent and the ground speed. Rate of descent and ground speed should be zero at 3 to 5 feet AGL, and the aircraft should be in a landing attitude.

NOTE: Normal engine RPM must be established before descending through 100 feet AGL.

CAUTION

In an OH-6, do not rapidly lower the collective to provide braking action.

c. Touchdown. Upon receiving the command, "Touchdown," the P* will continue the autorotative descent. Before 100 feet AGL is passed, all steady-state factors contained in Task 1066 must be attained. If they are not attained, a power recovery or a termination with power must be executed, as appropriate. At approximately 50 feet AGL, the P* will apply aft cyclic to initiate a smooth, progressive deceleration. He will maintain aircraft alignment with the touchdown area by properly applying the pedals and the cyclic. He will adjust the collective, if required, to prevent excessive rotor RPM. At approximately 10 feet AGL, the P* will apply sufficient collective to control the rate of descent and the ground speed. (The amount of collective applied and the rate of application will depend on the rate of descent and the ground speed.) The P* will adjust the cyclic to attain a level landing attitude. Just before touchdown, he will apply collective as necessary to cushion the landing. After touchdown, the P* will slowly lower the collective to the full-down position while maintaining ground track alignment with the pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.

3. The crew member not on the controls will assist the P* as directed. He will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NOTE: The IP will initiate all simulated engine failures using throttle reduction. If the simulated engine failure is to touchdown and is not being initiated during IP training or evaluations, the IP will announce "simulated engine failure."

NIGHT OR NVG CONSIDERATIONS:

1. This is an NVG-prohibited training task.

2. Attitude control is critical during night autorotations. Reduced visual references at night limits 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 descending through 200 feet AGL. If the searchlight or landing light is used, it should be turned on before descending through 100 feet AGL.

REFERENCES:

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

TASK 1057

TASK: Perform simulated hydraulic system malfunction.

CONDITIONS: In an OH-58A/C helicopter with an IP, with emergency procedures training criteria outlined in AR 95-1 met, and given entry altitude and airspeed.

STANDARDS:

1. Execute emergency procedures for hydraulic failure per the aircraft operator's manual.

2. Establish entry altitude as directed ±100 feet.

3. Establish entry airspeed as directed ±10 KIAS.

4. Maintain heading control ±10 degrees and ground track alignment with landing direction.

5. Maintain a constant shallow approach angle.

6. Perform a smooth and controlled termination.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will place the hydraulic control switch in the OFF position on the downwind leg or request that the P place the switch in the OFF position. The P* will maintain the desired heading, airspeed, and altitude while simulating the emergency procedure actions outlined in the aircraft checklist. When a shallow approach angle is intercepted, he will decrease the collective, as required, to establish and maintain that angle. The P* will maintain airspeed until the apparent ground speed and rate of closure appear to be increasing. He will progressively decrease the airspeed and rate of descent to touch down at a ground speed of 0 to 5 knots. After touchdown, the P* will maintain ground track alignment with the cyclic, heading with the pedals, and slowly decrease the collective to slow forward speed.

2. The crew member not on the controls will assist the P* as directed.

NOTE: During training, 80 KIAS is recommended on the downwind leg and 60 KIAS is recommended on crosswind and base legs.

NIGHT OR NVG CONSIDERATIONS: This is an NVG-prohibited training task.

REFERENCES:

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

TASK 1066

TASK: Perform standard autorotation.

CONDITIONS: In an observation helicopter with an IP, the emergency procedures training criteria outlined in AR 95-1 met, the before-landing check completed, and given entry altitude and airspeed.

STANDARDS:

1. Establish entry altitude as directed ±100 feet.
2. Establish entry airspeed as directed ±10 KIAS.
3. Determine the correct entry point.
4. Make the required verbal call outs at the proper time.
5. Establish airspeed 60 KIAS, +10, -5 KIAS, (OH-6 65 KIAS, ±5 KIAS) before reaching 100 feet AGL.
6. Perform a smooth, progressive deceleration.
7. Apply initial pitch at 10 feet, ±3 feet, AGL.
8. Maintain heading alignment at touchdown ±10 degrees.
9. Perform a smooth, controlled termination.
10. Correctly perform crew coordination actions.

CAUTION

In the OH-6, do not rapidly lower the collective to provide braking action.

DESCRIPTION:

1. The P* will maintain entry altitude and airspeed as directed until reaching the entry point. He will initiate the maneuver by lowering the collective to the full-down position, retard the throttle to engine-idle stop, and adjust the pedals to maintain trim. He will maintain ground track while crabbing (above 50 feet) and slipping (below 50 feet) the helicopter. The P* will adjust the cyclic to attain a 60-knot (in the OH-6, a 65-knot) attitude. He will call out rotor RPM, gas producer, and aircraft in trim, and check the circle of action. Before reaching 100 feet AGL, the P* will ensure that a steady-state autorotation is attained. If it is not attained, he will execute a power recovery or terminate with power, as appropriate. A steady-state autorotation means that--

a. Rotor RPM is within limits.

b. The aircraft is at the correct airspeed.

c. The aircraft is descending at a normal rate.

d. The aircraft is in a position to terminate in the intended landing area.

2. At approximately 50 feet AGL, the P* will apply aft cyclic to initiate a smooth, progressive deceleration. He will maintain aircraft alignment with the touchdown area by properly applying the pedals and the cyclic. He will adjust the collective, as required, to prevent excessive rotor RPM. At approximately 10 feet AGL, the P* will apply sufficient collective to minimize the rate of descent and the ground speed. The amount of collective applied and the rate of application will depend on the rate of descent and the ground speed. The P* will adjust the cyclic to attain a level landing attitude and, before touchdown, apply collective as necessary to cushion the landing. After touchdown, he will slowly lower the collective to the full-down position while maintaining ground track alignment with the pedals. When the aircraft comes to a complete stop, he will neutralize the pedals and the cyclic.

3. The crew member not on the controls will assist the P* as directed. He will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NVG CONSIDERATIONS:

1. This is an NVG-prohibited training task.

2. Attitude control is critical during night autorotations. Reduced visual references at night limits the aviator’s ability to estimate airspeed, altitude, and alignment with the touchdown area. To compensate for the reduced visual references, the aviator will attain a steady-state autorotation before descending through 200 feet AGL. Selecting ground references that provide high visual contrast or that are of a known height in the vicinity of the touchdown area will help in judging the approach. If the searchlight or landing light is used, it should be turned on before descending through 100 feet AGL.

REFERENCES:

Aircraft operator’s manual
FM 1-203

TASK 1067

TASK: Perform aerial observation.

CONDITIONS: In an observation helicopter or described orally in a classroom environment.

STANDARDS:

1. Use the correct visual search techniques.

2. Accurately locate the position of the target.

3. Accurately identify the target.

4. Without error, make the appropriate spot reports.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. During missions involving direct observation, the crew is primarily concerned with detection, identification, location, and reporting. Aerial observation is used in tactical and non-tactical environments.

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 crew may be able to locate the center of mass, the boundaries of the target, or the boundaries of the entire area.

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.

NOTE: Task 1092 shows the standard format for a spot report.

2. Visual search is the systematic visual coverage of a given area so that all parts of the area are observed. The

purpose of visual search is to detect objects or activities on the ground. The crew's ability 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 of survivability considerations.

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

c. Terrain and meteorological conditions. The size and details of the area that can be effectively covered largely depend on the type of terrain such as dense jungle or barren wasteland. 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 when reflecting light. Rough surfaces will not.

(3) Shapes and shadows. Man-made objects cast distinctive shadows 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 the type and quantity of traffic and how recently it passed.

(5) Smoke and dust. Smoke should be observed for color, smell, and volume. Dust from moving vehicles can be observed at great distances.

(6) Movement and light. The most easily detectable sign of enemy activity is movement and, at night, light. Movement may include disturbance of foliage, snow, soil, or birds.

(7) **Obvious sightings.** The enemy is skillful in the art of camouflage. The crew must be aware that obvious sightings may be intentional because of high concentrations of antiaircraft weapons.

3. The techniques that provide systematic methods for conducting visual aerial observation are motive and stationary. The technique used will depend on the altitude flown and the terrain encountered.

a. **Motive technique.** This technique is used when the aircraft is being operated at terrain flight altitudes and at airspeeds that are generally 10 KIAS or faster. When using the motive technique, the crew looks ahead of the aircraft and through the center of the acquisition sector for obvious sightings. The crew then scans through the acquisition sector and gradually works back toward the aircraft. The entire area on either side of the aircraft is divided into two major sectors, the nonobservation sector and the observation work sector.

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

(2) **Observation work sector.** The observation work area 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 and the recognition sectors.

(a) **Acquisition sector.** The acquisition sector is the forward 90-degree area of the observation work sector. It is at the approximate 10 o'clock to 2 o'clock position and has an overlap area in the center of the aircraft. The acquisition sector is the primary area of search.

(b) **Recognition sector.** The recognition sector is the remaining portion of the observation work sector.

NOTE: In a tactical environment when targets are sighted in the acquisition sector, the crew performs standard actions on contact. Then they normally switch to the stationary visual search technique for continued target observation.

b. **Stationary technique.** This technique is used at NOE altitudes with the helicopter hovering in a concealed position. When using the stationary technique, the crew makes a quick overall search for sightings and unnatural colors, outlines, or movements. Then they start scanning to the immediate front and search an area approximately 50 meters deep. The crew continues to scan outward from the aircraft, increasing the depth of the search area by overlapping 50-meter intervals until the entire search area is covered.

REFERENCES:

Aircraft operator's manual
FM 1-203
FM 1-402

TASK 1068

TASK: Perform or describe emergency procedures.

CONDITIONS: In an observation helicopter with an IP/IE or orally in a classroom environment and given a specific emergency condition.

STANDARDS:

1. **P*/P.** Without error, perform or describe the appropriate emergency procedures.

2. **AO/AFSO.**

a. Without error, set the avionics to the appropriate frequency and the transponder to the appropriate code.

b. If time permits, read the appropriate checklist procedure in the correct sequence.

c. Without error, perform those duties directed by the aviator.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*/P.** Perform or describe the appropriate emergency procedures as outlined in the aircraft operator's manual. Request the appropriate emergency assistance as described in the AIM.

2. **AO/AFSO.** When an emergency occurs, tune the avionics to the appropriate frequency and set the transponder to the appropriate code. Inform the controlling agency of the nature of the emergency. If time permits, locate the appropriate procedure in the operator's and crewmember's checklist. At the P*'s request, read the procedure to him and perform any other actions he requests.

NOTE 1: Those emergency procedures that cannot be practiced in the aircraft will be discussed orally.

NOTE 2: A thorough crew briefing is the most effective means of defining cockpit responsibilities and crew coordination during an emergency.

REFERENCES:

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

TASK 1072

TASK: Perform low-level autorotation.

CONDITIONS: In an observation helicopter with an IP, the emergency procedures training criteria outlined in AR 95-1 met, the before-landing check completed, and given entry altitude.

STANDARDS:

1. Establish entry altitude as directed ±10 feet.

2. Establish entry airspeed 80 KIAS, ±10 KIAS.

3. Determine the correct entry point.

4. Perform a smooth and progressive deceleration.

5. Apply initial pitch at 10 feet, ±3 feet, AGL.

6. Maintain heading alignment throughout the maneuver ±10 degrees.

7. Perform a smooth, controlled termination.

8. Correctly perform crew coordination actions.

> **CAUTION**
>
> In the OH-6, do not rapidly lower the collective to provide braking action.

DESCRIPTION:

1. On base leg, the P* will establish an angle of descent to arrive at an altitude of 50 feet AHO (or as directed) just before reaching the entry point. During the descent, he will maintain visual contact with the intended landing area and establish an entry point that ensures touchdown in the selected area. At the entry point, the P* will ensure that the aircraft is at the proper altitude and airspeed and in trim with cruise power applied. The P* will simultaneously lower the collective, retard the throttle to engine-idle stop, and apply aft cyclic to maintain entry altitude. He will visually check gas producer and rotor RPM and maintain entry altitude until a standard autorotational descent profile is intercepted. As the aircraft begins to descend, he will decelerate as in a standard autorotation and maintain aircraft alignment with the touchdown area by properly applying the pedals and the cyclic. The P* will adjust the collective, if required, to prevent excessive rotor RPM. At approximately 10 feet AGL, he will apply sufficient collective to control the rate of descent and the ground speed. The amount of collective applied and rate of application will depend on the rate of descent and ground speed. Just before touchdown, the P* will adjust the cyclic to attain a level landing attitude and apply collective as necessary to cushion the landing. After touchdown, he will slowly lower the collective to the full-down position while maintaining ground track alignment with the pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.

2. The crew member not on the controls will assist the P* as directed. He will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NVG CONSIDERATIONS:

1. This is an NVG-prohibited training task.

2. Attitude control is critical during night autorotations, especially at entry. Reduced visual references at night limits the aviator’s ability to estimate airspeed, altitude, and alignment with the touchdown area. Poper scanning techniques and the use of the searchlight or landing light before entry will assist in avoiding spatial disorientation.

REFERENCES:

Aircraft operator’s manual
FM 1-203

TASK 1073

TASK: Perform low-level and low-airspeed autorotation.

CONDITIONS: In an observation helicopter with an IP, the emergency procedures training criteria outlined in AR 95-1 met, the before-landing check completed, and given entry altitude.

STANDARDS:

1. Establish entry altitude as directed ±5 feet.

2. Establish entry airspeed 60 KIAS, ±5 KIAS (in the OH-6, 65 KIAS, ±5 KIAS).

3. Determine the correct entry point.

4. Apply initial pitch at 10 feet, ±3 feet, AGL.

5. Maintain heading alignment throughout maneuver ±10 degrees.

6. Perform a smooth, controlled termination.

7. Correctly perform crew coordination actions.

> **CAUTION**
>
> In an OH-6, do not rapidly lower the collective to provide braking action.

DESCRIPTION:

1. On base leg, the P* will establish an angle of descent to arrive on final at an altitude of 40 feet AGL (or as directed) just before reaching the entry point. During the descent, he will maintain visual contact with landing area and establish an entry point that ensures touchdown in the selected area. At the entry point, the P* will ensure that the aircraft is at the proper altitude and airspeed and in trim with power applied to sustain level flight. He will retard the throttle to engine-idle stop while simultaneously lowering the collective to the full-down position. The P* will maintain aircraft alignment with the touchdown area with the pedals. As the aircraft begins to descend, he will initiate a smooth deceleration. At approximately 10 feet AGL, the P* will apply sufficient collective to control the rate of descent and the ground speed. The amount of collective applied and the rate of application will depend on the rate of descent and the ground speed. Just before the aircraft touches down, he will adjust the cyclic to attain a level landing attitude and apply collective as necessary to cushion the landing. After the aircraft touches down, he will slowly lower collective to the full-down position while maintaining ground track alignment with the pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.

2. The crew member not on the controls will assist the P* as directed. He will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NVG CONSIDERATIONS: This is a night- and NVG-prohibited training task.

REFERENCES:

Aircraft operator's manual
FM 1-203

TASK 1074

TASK: Perform standard autorotation with turn.

CONDITIONS: In an observation helicopter with an IP, the emergency procedures training criteria outlined in AR 95-1 met, before-landing check completed, and given entry altitude and airspeed.

STANDARDS:

1. Establish entry altitude as directed ±100 feet.

2. Establish entry airspeed as directed ±10 KIAS.

3. Determine the correct entry point.

4. Make the required verbal call outs at the proper time.

5. Maintain a 60-knot attitude during the turn.

6. Complete the final turn and align the aircraft with the landing area before reaching 200 feet AGL.

7. Establish a 60-knot airspeed, +10 -5 KIAS, (in the OH-6, 65 KIAS, ±5 KIAS) before reaching 100 feet AGL.

8. Perform a smooth, progressive deceleration.

9. Apply initial pitch at 10 feet, ±3 feet, AGL.

10. Maintain heading alignment at touchdown ±10 degrees.

11. Perform a smooth, controlled termination.

12. Correctly perform crew coordination actions.

CAUTION

In an OH-6, do not rapidly lower the collective to provide braking action.

DESCRIPTION:

1. The P* will maintain entry altitude and airspeed as directed until reaching the entry point. He will initiate the maneuver by lowering the collective to the full-down position, retard the throttle to engine-idle stop, and adjust the pedals to maintain trim. He will smoothly apply the cyclic to attain a 60-knot (in the OH-6, 65-knot) attitude descending turn. The P* will disregard the airspeed indicator during the turn and adjust the collective as required to maintain rotor RPM within limits. He will call out rotor RPM, gas producer, and aircraft in trim. The P* will adjust the angle of bank as necessary to ensure that the turn is completed and the aircraft is aligned with the landing area before descending below 200 feet AGL. Before reaching 100 feet AGL, he will ensure that a steady-state autorotation is attained. If it is not attained, he will execute a go-around or terminate with power as appropriate. A steady-state autorotation means that--

a. Rotor RPM is within limits.

b. The aircraft is at the correct airspeed.

c. The aircraft is descending at a normal rate.

d. The aircraft is in a position to terminate in the intended landing area.

2. At approximately 50 feet AGL, the P* will apply aft cyclic to initiate a smooth, progressive deceleration. He will maintain aircraft alignment with the touchdown area by properly applying the pedals and the cyclic. He will adjust the collective, if required, to prevent excessive rotor RPM. At approximately 10 feet AGL, the P* will apply sufficient collective to control the rate of descent and the ground speed. The amount of collective applied and the rate of application will depend on the rate of descent and the ground speed. Just before touchdown, he will adjust the cyclic to attain a level landing attitude and apply the collective as necessary to cushion the landing. After touchdown, the P* will slowly lower the collective to the full-down position while maintaining ground track alignment with the pedals. When the aircraft comes to a complete stop, he will neutralize the pedals and the cyclic.

3. The crew member not on the controls will assist the P* as directed. He will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NVG CONSIDERATIONS:

1. This is an NVG-prohibited training task.

2. Attitude control is critical during night autorotations. Reduced visual preferences at night limits the aviator’s ability to estimate airspeed, altitude, and alignment with the touchdown area. To compensate for the reduced visual references, the aviator will attain a steady-state autorotation before descending through 200 feet AGL. Selecting ground references that are in the vicinity of the touchdown area and ones that provide high visual contrast or are of a known height will help in judging the approach. If the searchlight or landing light is used, it should be turned on before descending through 100 feet AGL.

REFERENCES:

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

TASK 1075

TASK: Perform instrument takeoff.

CONDITIONS: In an observation helicopter under simulated IMC; with the hover power and before-takeoff checks completed.

STANDARDS:

1. Correctly set the attitude indicator. (On the OH-58A, OH-58A+, and OH-6, the correct setting is on the horizon; on the OH-58C, the correct setting is 5 degrees above the horizon.)

2. Maintain the required takeoff power ±2 percent/PSI torque.

3. Maintain accelerative climb attitude ±1 bar width.

4. Maintain takeoff heading ±10 degrees.

5. Maintain aircraft in trim after ETL.

6. Maintain the appropriate rate of climb ±100 FPM.

7. 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. Before the aircraft enters simulated IMC, the P* will make the transition to the flight instruments.

2. The P will announce when ready for takeoff and 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 also announce when his attention is focused inside the aircraft.

3. The P* will perform the following actions:

a. **<u>From the ground.</u>** Align the aircraft with the desired takeoff heading. Set the attitude indicator for takeoff. With the cyclic in the neutral position, smoothly increase the collective until the aircraft becomes light on the skids. Use outside visual references to prevent movement of the aircraft, and check the controls for proper response. While referring to the flight instruments, smoothly increase the collective to obtain takeoff power (10 percent or 10 psi above hover power for training). As the collective is increased, cross-check the attitude and heading indicators to ensure that the attitude of the aircraft is correct and that a constant heading is maintained. When takeoff power is reached and the altimeter and the vertical speed indicator show a positive climb, adjust the pitch attitude 2 bar widths below the horizon for the initial acceleration. Maintain heading with the pedals before accelerating through ETL. After the aircraft accelerates through ETL, make the transition to coordinated flight. Upon approaching climb airspeed, adjust the 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. 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 (10 percent or 10 psi above hover power for training). Simultaneously adjust pitch attitude 2 bar widths below the horizon to establish initial accelerative climb attitude. Visually maintain runway clearance and alignment on takeoff until the aircraft accelerates through ETL. At that time, direct attention to the flight instruments and establish an instrument cross-check.

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 an observation helicopter under simulated IMC and with the appropriate navigational publications.

STANDARDS:

1. **P*.**

a. Maintain altitude ±100 feet.

b. Maintain airspeed ±10 KIAS.

c. Correctly tune and identify the appropriate NAVAIDS.

d. Correctly determine aircraft position.

e. Correctly intercept and maintain the desired course.

f. Correctly identify station passage.

2. **P/AO/AFSO.**

a. Without error, request, acknowledge, and record ATC clearance information.

b. Without error, tune and identify the appropriate NAVAID with the aid of the navigational chart.

c. Correctly determine the position of the aircraft and station passage.

d. Be sufficiently familiar with navigational charts and the IFR supplement so that required in-flight information can be obtained in a timely manner.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*.**

a. **Equipment check.** Check all radio navigation equipment to be used during the mission. Equipment must be operable and within accuracy tolerances, if applicable, as specified in FM 1-240 and the aircraft operator's manual.

b. Station identification. Obtain the correct frequency for the desired navigational station, and then tune the equipment. Make a positive identification of the station.

c. Aircraft position. Determine the position of the aircraft with respect to a specified navigational ground station according to the procedures in FM 1-240.

d. Course interception. After identifying the desired station, determine the location of the aircraft in relation to the desired course. Turn the aircraft 45 degrees toward the course (90 degrees to expedite). Maintain intercept heading until approaching an on-course indication. Depending on the rate of closure, start a turn to intercept the desired track on course.

e. Course tracking. Maintain the desired heading until navigational instruments show an off-course condition; then turn 30 degrees toward the course to reintercept. If navigational instruments do not indicate movement toward the course within a reasonable time, increase the intercept angle. When the course is reintercepted, toward the course and apply the appropriate drift correction (normally one-half of the intercept angle). Continue to bracket the course by decreasing corrections until a heading is obtained that will maintain the aircraft on course.

f. Intersection arrival. Determine arrival at radio intersections according to the procedures in FM 1-240.

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

2. P/AO/AFSO. Assist the P* with radio navigation tasks during the flight. These tasks will include requesting, acknowledging, and recording the initial ATC clearance and en route changes and tuning and identifying NAVAIDs. They also will include knowing the position of the aircraft at all times, determining station passage, and locating the proper navigational charts when requested by the P*.

REFERENCES:

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

TASK 1077

TASK: Perform holding procedures.

CONDITIONS: In an observation helicopter under simulated IMC and given an altitude, holding instructions, and appropriate navigational publications.

STANDARDS:

1. Maintain altitude ±100 feet.
2. Maintain airspeed ±10 KIAS.
3. Correctly tune and identify the appropriate NAVAIDs.
4. Correctly enter the holding pattern.
5. Correctly time and track holding pattern legs.
6. Correctly perform crew coordination actions.

DESCRIPTION:

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

2. The crew member not on the controls will assist the P* as directed.

REFERENCES:

AIM
DOD FLIP
FM 1-240

TASK 1078

TASK: Perform unusual attitude recovery.

CONDITIONS: In an observation helicopter with a UT, an IP, or an IE and under simulated IMC.

STANDARDS:

1. P*.

a. Correctly analyze aircraft attitude.

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

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

2. P/AO/AFSO.

a. Monitor the attitude indicator and immediately alert the P* of any unlevel conditions.

b. Monitor the airspeed indicator and immediately call out the indicated airspeed.

c. Monitor the altimeter and immediately alert the P* if the aircraft is below the assigned altitude.

3. Crew. Correctly perform crew coordination actions.

DESCRIPTION:

1. The IP, UT, or IE will direct unusual attitude recovery and transfer the aircraft controls. He will provide adequate warning for corrective action if aircraft operating limitations may be exceeded. 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. When the P* announces "unusual attitude," the AO/AFSO will announce the attitude and airspeed of the aircraft, check the altimeter, and alert the P* if the aircraft has deviated from the assigned altitude.

REFERENCES:

Aircraft operator’s manual
AR 95-1
FM 1-240

TASK 1079

TASK: Perform radio communication procedures.

CONDITIONS: In an observation helicopter with two-way radio communications established.

STANDARDS:

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

2. Establish radio contact with the appropriate ATC facility.

3. Use correct radio communication procedures and phraseology per the DOD FLIP when communicating with ATC facilities.

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

5. Acknowledge and comply with instructions to change frequencies.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The PC will assign radio frequencies per mission requirements during the crew briefing and will indicate which crew member will establish and maintain primary communications.

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

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

4. The crew member assigned responsibility for communication procedures will perform the following actions:

a. Adjust the avionics to the required frequencies, and continuously monitor the avionics.

b. When required, establish communications with the appropriate ATC facility. Monitor the frequency before transmitting. Transmit pilot reports, position reports, and flight plan changes.

c. 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 specified time, fix, or altitude.

d. Use radio communication procedures and phraseology appropriate for the area of operations.

REFERENCES:

AIM
DOD FLIP
Unit SOP

TASK 1080

TASK: Perform procedures for two-way radio failure.

CONDITIONS: In an observation helicopter or orally in a classroom environment.

STANDARDS:

1. **PC.** Implement the correct procedures for two-way radio failure.

2. **P/AO/AFSO.** Implement the correct procedures for two-way radio failure as directed by the PC.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **PC.**

a. **VFR conditions.** If two-way radio failure occurs in VFR conditions or if these conditions are encountered after the failure, continue the flight under VFR. Land as soon as practicable according to the procedures in the FIH, DOD FLIP, and unit SOP.

b. **IMC.**

(1) If two-way radio failure occurs while operating in the NAS, adjust the transponder and continue the flight according to instructions in the FIH and/or AIM.

(2) If two-way radio failure occurs while operating outside CONUS, comply with ICAO rules or applicable host-country regulations.

2. **P/AO/AFSO.** Upon determining the loss of two-way radio communications, assist the PC by performing duties as requested. Duties may include attempting contact on an alternate frequency or radio and transmitting the appropriate transponder code.

REFERENCES:

AIM
DOD FLIP
FIH
Unit SOP

TASK 1081

TASK: Perform nonprecision approach.

CONDITIONS: In an observation helicopter under simulated IMC and with the appropriate DOD FLIP and the approach clearance received.

STANDARDS:

1. <u>P*.</u>

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 prescribed courses as follows:

(1) NDB courses--±5 degrees.

(2) VOR courses--within a one-half scale deflection of the CDI or ±5 degrees using the RBHI.

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

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

f. Comply with descent minimums prescribed for the approach.

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

2. <u>P/AO/AFSO.</u>

a. Without error, request, acknowledge, and record ATC information.

b. Without error, tune the avionics to the appropriate frequencies with the aid of the DOD FLIP.

c. Provide the P* with the correct approach minimums as listed in the appropriate DOD FLIP.

3. <u>Crew.</u> Correctly perform crew coordination actions.

DESCRIPTION: The P* will perform the approach as described in FM 1-240. The P/AO/AFSO will assist the P* by--

a. Tuning the avionics to the proper frequencies and providing the instrument approach minimums listed in the DOD FLIP .

b. Maintaining communications with ATC and recording ATC information when appropriate.

c. Keeping a sharp lookout and informing the aviator immediately of any observed aircraft by using clock positions, distance, and the terms “high,” “low,” or “level.”

d. Announcing the MDA and performing other duties as requested by the P*.

NOTE 1: The P/AO/AFSO must notify the P* and receive acknowledgement before changing frequencies or tuning the NAVAIDs.

NOTE 2: When an AO/AFSO occupies the second crew position, practice hooded approaches may not be made lower than that prescribed in AR 95-1.

REFERENCES:

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

TASK 1082

TASK: Perform precision approach.

CONDITIONS: In an observation helicopter under simulated IMC and with the appropriate DOD FLIP and approach clearance received.

STANDARDS:

1. **P*.**

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, maintain the course deviation bar within a full-scale deflection of the CDI; for final approach, maintain the glide slope indicator within a full-scale deflection.

(2) For a PAR approach, maintain headings as directed by ATC; for 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 DH prescribed for the approach.

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

2. **P/AO/AFSO.**

a. Without error, request, acknowledge, and record ATC information.

b. Provide the P* with correct approach minimums as listed in the appropriate DOD FLIP.

c. Correctly tune and identify the appropriate navaids.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION: The P* will perform the approach as described in FM 1-240. The P/AO/AFSO will assist the P* by—

a. Tuning the avionics to the proper frequencies and providing the instrument approach minimums listed in the DOD FLIP.

b. Maintaining communications with ATC and recording ATC information when appropriate.

c. Keeping a sharp lookout and informing the P* immediately of any observed aircraft by using clock positions, distance, and the terms "high," "low," or "level."

d. Announcing the DH and performing other duties as requested by the P*.

NOTE 1: The P/AO/AFSO must notify the P* and receive acknowledgement before changing frequencies or tuning the NAVAIDs.

NOTE 2: When an AO/AFSO occupies the second crew position, practice hooded approaches may not be made lower than that prescribed in AR 95-1.

REFERENCES:

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

TASK 1083

TASK: Perform or describe inadvertent IMC procedures/VHIRP.

CONDITIONS: In an observation helicopter under simulated IMC or orally in a classroom environment.

STANDARDS:

1. **P*.**

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

b. Initiate a climb immediately.

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

2. **P/AO/AFSO.**

a. Monitor the attitude indicator, and immediately alert the P* of any unusual attitude condition.

b. Without error, tune the avionics to the appropriate frequency and set the transponder to the appropriate code.

c. Without error, request ATC assistance and acknowledge and record the appropriate information.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*.** If inadvertent IMC are encountered, announce, "I am IMC," and proceed as follows:

a. Level the wings on the attitude indicator.

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

c. Adjust torque to climb power.

d. Adjust airspeed to climb airspeed.

e. Complete the inadvertent IMC recovery/VHIRP procedures according to local regulations and policies.

2. **P/AO/AFSO.** When the P* announces, "I am IMC," immediately check the attitude indicator to determine whether the aircraft is level. If the aircraft is not level, immediately alert the aviator by announcing, "The aircraft is not level." Continue to assist the P* by tuning the avionics, setting the transponder, and contacting the appropriate ATC facilities as outlined in the unit SOP. Maintain the required communications with ATC, and record ATC information when appropriate. Monitor instruments as directed by the P*.

NOTE: The P/AO/AFSO must notify the P* and receive acknowledgement before changing frequencies or tuning the NAVAIDs.

NIGHT OR NVG CONSIDERATIONS:

1. When wearing the NVG, the crew can see through thin obscurations, such as light fog or drizzle, with little or no degradation.

2. The NVG may be removed or flipped up once cruise flight is established.

NOTE: If IMC are entered with the IR searchlight or landing light on, spatial disorientation may occur.

REFERENCES:

AR 95-1
AR 95-2
AR 95-3
AR 95-10
FM 1-202
FM 1-203
FM 1-240
TC 1-204
Unit SOP

TASK 1090

TASK: Perform masking and unmasking.

CONDITIONS: In an observation helicopter and the hover power check completed.

STANDARDS:

1. P*.

a. Correctly mask the aircraft from enemy visual, optical, thermal, and electronic detection.

b. Maintain sufficient distance behind the obstacle to allow for safe maneuvering.

c. Move to a new location after unmasking, if one is available.

2. P/AO/AFSO.

a. Perform a thorough map reconnaissance of the desired observation area.

b. Properly monitor instruments as directed by the P*.

c. Properly clear the aircraft.

d. Immediately alert the P* if the aircraft drifts during hover.

3. Crew. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will maintain visual reference outside the aircraft to clear the aircraft throughout the maneuver. He will announce the type of masking and unmasking before the maneuver is executed. Masking involves using natural and man-made features to minimize the enemy's ability to detect the aircraft visually, optically, or electronically. Unmasking involves exposing the aircraft in order to perform a visual search.

2. Before masking or unmasking, the crew will confirm that adequate power exists, perform a map reconnaissance, and divide the observation work areas. The P\AO\AFSO will assist in announcing adequate warning to avoid obstacles, unusual or unanticipated drift, and altitude changes.

3. The P* will announce his intentions to unmask and ensure that the aircraft is cleared before any movement. He will coordinate the flight controls as necessary to attain the desired position, altitude, flight path, and heading. He will maintain sufficient distance from obstacles to allow for safe maneuvering. The P* will direct the P/AO/AFSO to assist in drift detection and obstacle avoidance and ensure that aircraft limitations are not exceeded.

4. The P/AO/AFSO will acknowledge all announcements and instructions from the P* and question any deviation not announced by the P*. To aid in drift detection and obstacle avoidance, the P/AO/AFSO will minimize the time he focuses inside the aircraft.

5. The crew will perform the following actions:

a. **Masking in flight.** With the aid of the map assisted by the P/AO/AFSO, the P* flies to the objective using routes that provide concealment from enemy visual observation or electronic detection. The P/AO/AFSO should look far enough ahead on the map for hazards to alert the P* of any hazards well before reaching them. The crew must maintain orientation at all times.

b. **Unmasking in flight.** The P* will keep exposure time to a minimum to prevent enemy detection. The crew must be aware that Gundish radar can lock on a target within two to nine seconds.

c. **Unmasking at a hover (vertically).** The P* ensures that sufficient power is available to unmask. The P/AO/AFSO assists the P* as directed. The P* applies collective until sufficient altitude is obtained to see over the mask while not exceeding aircraft limitations. The P* should maintain horizontal clearance from the mask in case of a power loss or a tactical need to mask the aircraft quickly. When possible, he should unmask at a safe distance from the mask to allow the aircraft to descend rapidly to a masked condition in case it is detected or fired upon. The crew should be aware of a common tendency to move forward or rearward while vertically unmasking and remasking. Aircraft exposure time must be kept to a minimum. The crew must clear the aircraft of obstacles directly below if descending vertically or obstacles in the flight path if moving laterally.

d. **Unmasking at a hover (laterally).** When at a hover, it is sometimes possible to unmask by moving laterally from the mask. The P* should hover the aircraft sideward to provide the smallest silhouette possible to enemy observation or fire. He will keep exposure time to a minimum. The P/AO/AFSO assists the P* in clearing the aircraft of obstacles.

NOTE 1: When unmasking the helicopter, the P* should select a new location that is a significant distance from the previous location but at a place where the target area can still be observed. If the target area is a long distance (2,000 to 3,000 meters) away, moving only 100 meters will still keep the aircraft in the same field of view from the target. However, if the target area is close to the unmasking position, a shift of 100 meters will make a significant difference.

NOTE 2: Hover OGE power is required for masking and unmasking.

NIGHT OR NVG CONSIDERATIONS: Maintaining altitude and position is more difficult at a hover above 25 feet without aircraft lights. (The barometric altimeter is not a reliable altitude reference for this maneuver.) References, such as lights, tops of trees, or man-made objects above and to the front and sides of the aircraft, must be used. By establishing a reference angle to these objects, the crew can detect altitude changes by changes in its viewing perspective. Hovering near ground features, such as roads, provides ideal references for judging lateral movement. However, the P* may become spatially disoriented when changing his viewing perspective back and forth between high and low references. Since visual references are fewer at night, the P* must rely heavily on the P/AO/AFSO to clear the aircraft and maintain the position of the aircraft over the ground.

REFERENCES:

Aircraft operator’s manual
ASET Programs
FM 1-203
TC 1-204

TASK 1091

TASK: Perform tactical communication procedures and electronic counter-countermeasures.

CONDITIONS: In an observation helicopter with SOI or orally in a classroom environment.

STANDARDS:

1. Properly operate aircraft avionics.
2. Maintain radio discipline at all times.
3. Correctly use SOI.
4. Correctly recognize and respond to enemy EW actions.
5. Correctly perform crew coordination actions.

DESCRIPTION:

1. **Voice Communication.** Voice communication in a tactical environment should be used only when absolutely necessary. If voice communication is required, the best method is to operate in the secure voice mode. To eliminate confusion and reduce transmission time, the crew must use approved communication words and phrases, and transmit information clearly, concisely, and slowly enough to be understood by the receiving station. (Ideally, transmissions should be kept under ten seconds.) A unit or an individual must not be identified by name during nonsecure radio transmissions.

2. **Communication Considerations.**

a. **Authentication.** The crew must 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.** The crew must keep accurate and detailed records of any MIJI incidents suspected to be intentional interference. The crew must use a secure communication means to report the incident as soon as possible.

c. **SIF/IFF usage.** During radio checks, the crew should select the appropriate transponder mode on the selector and test the system and monitor the SIF/IFF reply light during the flight.

3. Radio Silence Operations. Future combat operations may require crews to fly missions without the use of radios. Alternate means of communication are briefly described below.

a. SAM system. The SAM 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.

b. Other visual methods. Flags, lights, panels, pyrotechnics, hand-and-arm signals, and aircraft maneuvers are some of the other visual communication methods. The unit SOP and SOI describe these methods in detail.

NOTE: The crew must 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
TM 11-5895-1199-12
Unit SOP

TASK 1092

TASK: Transmit a tactical report.

CONDITIONS: In an observation helicopter or orally in a classroom environment and given sufficient information to compile a tactical report.

STANDARDS:

1. Correctly transmit an appropriate report using the proper format.

2. Correctly perform crew coordination actions.

DESCRIPTION: The crew must be able to provide timely, concise reports. To save time, reduce confusion, and ensure completeness, information should be reported according to an established format. Standard formats for four 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. **Battle damage assessment.** The crew must submit a BDA following naval gunfire, artillery fire (if requested), or a tactical air strike.

ALFA: Call sign of observing source.
BRAVO: Location of target.
CHARLIE: Time strike started and ended.

DELTA: Percentage of target coverage (pertains to the percentage of projectiles that hit the target area).
ECHO: Itemized destruction.
FOXTROT: Remarks. (These may be omitted; however, they may contain additional information such as the direction the enemy may have taken in leaving the target area.)

c. <u>Enemy shelling, bombing, or NBC warfare activity report.</u> The crew must submit this report following enemy shelling, bombing, or NBC warfare activity.

ALFA: From (unit call sign) and type of report.
BRAVO: Position of observer (grid coordinates in code).
CHARLIE: Azimuth of flash, sound, or groove of shell (state which) or origin of flight path of missile.
DELTA: Time from (date-time of attack).
ECHO: Time to (for illumination time).
FOXTROT: Area attacked (either azimuth and distance from observer in code or grid coordinates in the clear).
GOLF: Number and nature of guns, mortars, aircraft, or other means of delivery, if known.
HOTEL: Nature of fire (barrage, registration, and so on) or NBC-1 type of burst (air or surface) or type of toxic agent.
INDIA: Number and type of bombs, shells, rockets, and so on.
JULIETT: Flash-to-bang time in seconds.
KILO: If NBC-1, damage (in code) or crater diameter.
LIMA: If NBC-1, fireball width immediately after shock wave (do not report if data was obtained more than five minutes after detonation).
MIKE: If NBC-1, cloud height (state top or bottom) ten minutes after burst.
NOVEMBER: If NBC-1, cloud width ten minutes after burst.

NOTE: State units of measure used such as meters or miles. For additional information, see FMs 3-12 and 3-100. As a minimum, an NBC-1 report requires lines A, B, C, D, H, and J and either L or M.

d. <u>Meaconing, intrusion, jamming, and interference report.</u> Once jamming is discovered, the crew 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 (UHF, VHF, FM, 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 percent of transmission blockage).
Line 10:	Operator's name and rank.
Line 11:	Remarks (list anything else that may be helpful in identifying or locating the source of interference, and send it to higher headquarters by an alternate, secure means).

NOTE: Encryption is only required if information is transmitted over nonsecure means.

REFERENCES:

DOD FLIP
FM 1-116
FM 3-100
FM 34-1
Unit SOP

TASK 1093

TASK: Perform techniques of movement.

CONDITIONS: In an observation helicopter with mission planning completed.

STANDARDS:

1. Correctly conduct tactical movement using traveling, traveling overwatch, or bounding overwatch.

2. Correctly perform crew coordination actions.

DESCRIPTION: Techniques of movement are designed to exploit the mobility of helicopters while employing the fire and maneuver concept. The techniques of tactical movement used by the crew are as follows:

a. **Traveling.** This technique is primarily used when enemy contact is not likely. It is the fastest method for moving a formation of aircraft but provides the least amount of security. Low-level flight and contour flight at high airspeed are normally used for movement.

b. **Traveling overwatch.** This technique is used when enemy contact is possible. It is characterized by continuous movement of the 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 normally 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 expected 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 that offers observation and fields of fire against potential enemy positions. Contour flight and NOE flight are normally used for movement. Airspeed during each bound is varied, depending on the availability of vegetation and terrain for concealment.

NOTE: When multiple aircraft are not available to perform this task, the task may be described in the aircraft or conducted in a classroom environment.

REFERENCES:

Aircraft operator's manual
FM 1-112
FM 1-116
TC 1-201
Unit SOP

TASK 1094

TASK: Identify major US or allied equipment and major threat equipment.

CONDITIONS: In a tactical or 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 NATO nomenclature per FM 1-402.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew will identify major US or allied equipment expected to be in the area of operations while looking at the actual equipment or when shown photographs or mock-ups of the equipment.

2. The crew will identify major threat equipment expected to be in the area of operations while looking at the actual equipment or when shown photographs or mock-ups of the equipment.

REFERENCE:

FM 1-402

TASK 1095

TASK: Operate aircraft survivability equipment.

CONDITIONS: In an observation helicopter equipped with ASE, during a tactical flight in a simulated threat environment or orally in a classroom environment.

STANDARDS:

1. Correctly prepare equipment for operation.

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

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

4. Properly operate the equipment.

5. Correctly perform crew coordination actions.

DESCRIPTION: The crew will perform or simulate operational and employment procedures and precautions for the AN/APR-39(V)1 and AN/APR-39A(V)1. These include preflight inspection; turn-on, self-test, and operational checks; mission employment doctrine and operating procedures; partial failure alternatives; indication or signal interpretation; and shutdown procedures.

NOTE: Refer to the technical manual listed below for details about the operation of ASE currently on the aircraft.

REFERENCES:

Aircraft operator's manual
ASET Programs
FM 1-101
TM 11-5841-283-12

TASK 1096

TASK: Perform actions on contact.

CONDITIONS: In an observation helicopter or a simulated tactical environment with a tactical map or orally in a classroom environment.

STANDARDS:

1. **P*.** Use the correct actions on contact consistent with the tactical situation.

2. **P/AO/AFSO.** Properly assist the P* in performing actions on contact.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will immediately deploy the aircraft to a covered, concealed position using suppressive fires, if appropriate.

2. The crew will—

a. Continue observation as appropriate to the mission.

b. Report the situation.

c. Develop the situation as required.

d. Choose a course of action (normally dictated by the unit commander.)

NOTE: Tactical reports and evasive maneuvers are covered in Tasks 1092 and 2008 respectively.

REFERENCES:

Aircraft operator's manual
FM 1-116
Unit SOP

TASK 1097

TASK: Negotiate wire obstacles.

CONDITIONS: In an observation helicopter in a simulated tactical environment.

STANDARDS:

1. **P*.**

   a. Locate and accurately estimate the height of wires.

   b. Determine the best method to negotiate the wire obstacle.

2. **P/AO/AFSO.** Assist the P* in locating and estimating the height of wires.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*.** The P* will locate wires and, to determine the method of crossing, accurately estimate the amount of clearance between them and the ground. He will locate guy wires and supporting poles and, before crossing, identify the highest wire. The P* will overfly wires near a pole to aid in visual perception. When flying under wires, he will maintain minimum clearance of hover height plus 20 feet (in the OH-6, hover height plus 17 feet) and a ground speed no greater than that of a brisk walk. The P* will ensure lateral clearance from guy wires and poles.

2. **P/AO/AFSO.** The P/AO/AFSO will use a map to alert the P* of possible wire hazards. He will announce adequate warning to avoid hazards, wires, and poles supporting structures.

NOTE 1: The crew must maintain proper scanning techniques to ensure obstacle avoidance and aircraft clearance.

NOTE 2: The P/AO/AFSO may dismount and act as a ground guide during this task.

NIGHT OR NVG CONSIDERATIONS: Wires are difficult to detect with the NVG. Therefore, this task should not be performed while wearing the NVG unless the flight area has been checked during daylight conditions and all hazards identified.

REFERENCES:

TC 1-201
Unit SOP

TASK 1099

TASK: Operate Mark XII IFF System.

CONDITIONS: In an observation helicopter or orally in a classroom environment and equipped with the Mark XII IFF system or control head.

STANDARDS:

1. Correctly prepare system for operation.

2. Correctly perform self-test check.

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

4. Correctly operate the equipment without assistance.

5. Correctly perform crew coordination actions.

DESCRIPTION: The crew will perform or simulate the operational and employment procedures and precautions for the Mark XII IFF system. These include preflight inspection; turn-on, self-test, and operational checks; mission employment doctrine and operating procedures; partial failure alternatives; indication or signal interpretation; and shutdown procedures. If the KIT 1A or KIT 1C is not available or is not installed, IFF operations will be simulated using the control head.

NOTE: Refer to TM 11-5895-1199-12 for details about the Mark XII IFF system.

REFERENCES:

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

TASK 1151

TASK: Perform simulated antitorque malfunction (fixed-pedal setting).

CONDITIONS: In an observation helicopter with an IP, the emergency procedures training criteria outlined in AR 95-1 met, the before-landing check completed, and given entry altitude and airspeed.

STANDARDS:

1. Establish entry altitude as directed ±100 feet.

2. Establish entry airspeed as directed ±10 KIAS.

3. Maintain a constant approach angle.

4. Maintain ground track alignment with the landing direction.

5. Maintain landing area alignment at touchdown ±10 degrees.

6. Perform a smooth, controlled termination.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. <u>Right Pedal Setting.</u>

a. On base leg, the P* will descend to the appropriate altitude and decelerate to 60 KIAS. On final, he will ensure that the aircraft is at the proper altitude and airspeed and in trim with power set as necessary to maintain level flight at 60 KIAS. The IP will then establish a 10-degree nose-right, out-of-trim condition (not to exceed 20 degrees from the runway heading). After intercepting a 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 the rate of closure appear to be increasing. He will progressively decrease the rate of descent and the rate of closure.

b. The P* will plan to arrive over the first one-third of the landing area approximately two feet above the ground at a minimum airspeed for directional control. He will reduce the throttle as necessary to overcome the yaw effect (nose right).

c. 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 and to minimize forward speed. When the aircraft comes to a complete stop, he will reduce the collective to the full-down position and neutralize the pedals and the cyclic.

2. Left Pedal Setting.

a. On base leg, the P* will descend to the appropriate altitude and decelerate to 60 KIAS. On final, he will ensure that the aircraft is at the proper altitude and airspeed and in trim with power set as necessary to maintain level flight at 60 KIAS. The IP will then establish a 10-degree nose-left, out-of-trim condition (not to exceed 20 degrees from the runway heading). After intercepting a shallow approach angle, the P* will adjust the collective as necessary to maintain the angle. He will also maintain entry airspeed until the apparent ground speed and the rate of closure appear to be increasing. He will progressively decrease the rate of descent and the rate of closure.

b. The P* will plan to arrive over the first one-third of the landing area approximately two feet above the ground at or slightly above ETL. If the nose of the aircraft is to the left, he will maintain altitude with the collective while decreasing forward speed until ETL is lost. (At this point, the nose of the aircraft should move to the right because of the increased power required to maintain altitude.) The P* will continue the rest of the maneuver as in 1C.

NOTE 1: The crew member not on the controls will assist the P* as directed.

NOTE 2: After touchdown, aircraft heading may not be controllable with the throttle and the collective. If this happens, position the cyclic to follow the turn while recovering the aircraft with pedal inputs.

NOTE 3: In case of an actual in-flight emergency that results in fixed tail rotor pitch settings, use the procedures outlined in the aircraft operator's manual.

NIGHT OR NVG CONSIDERATIONS: This is an NVG-prohibited training task.

REFERENCES:

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

TASK 2004

TASK: Perform pinnacle or ridgeline operation.

CONDITIONS: In an observation helicopter with before-landing check completed.

STANDARDS:

1. **Landing Area Reconnaissance.**

   a. Establish entry altitude ±100 feet.

   b. Establish entry airspeed ±10 KIAS.

   c. Properly perform continuous reconnaissance.

2. **Approach.**

   a. Maintain ground track alignment with the selected approach path with minimum drift.

   b. Maintain a constant approach angle.

   c. Maintain an appropriate rate of closure.

   d. Continue to properly perform a landing area reconnaissance.

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

3. **Takeoff.**

   a. Without error, complete a before-takeoff check.

   b. Properly clear the aircraft.

   c. Perform an airspeed-over-altitude takeoff while maintaining heading ±10 degrees.

   d. Maintain appropriate airspeed ±10 KIAS.

4. **Crew Coordination.** Properly perform crew coordination actions.

DESCRIPTION:

1. The P* will perform the landing area reconnaissance on the windward side of the pinnacle or ridgeline when practical. As he approaches the area, he will evaluate the overall suitability of the landing site. The P* will select a flight path, airspeed, and altitude that will provide the best observation. After determining if the landing site is suitable, he will locate obstacles and estimate the effects of the wind. The P* should plan the approach to the forward one-third of the landing area. Depending on the wind, density altitude, load, and forced landing areas, the approach angle can vary from a shallow to a steep angle. The P* will continue the landing area reconnaissance on final approach to confirm information gained and, when surface conditions permit, land to the ground. He will execute a go-around if the reconnaissance reveals that a safe landing cannot be made.

2. After touchdown, the P* will conduct a stability check before lowering the collective to the full-down position. This should be accomplished by slowly moving the cyclic and pedals while lowering the collective. If movement is detected, the P* should reposition the aircraft. He will clear the aircraft and execute an airspeed-over-altitude takeoff. If the takeoff requires clearing obstacles, the P* should not use an angle of climb that is greater than that required to clear them. The P* should use power as necessary to clear the obstacles safely while maintaining a constant angle of climb and ground track. After clearing the obstacles, he will adjust the attitude to gain forward airspeed.

3. The crew member not on the controls will assist the P* as directed. He will also monitor aircraft instruments, rates of closure, and will assist the P* in obstacle avoidance.

NIGHT OR NVG CONSIDERATIONS:

1. Treat visual obstacles the same as physical obstacles.

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

REFERENCES:

Aircraft operator’s manual
FM 1-202
FM 1-203
TC 1-204
Unit SOP

TASK 2005

TASK: Perform FM radio homing.

CONDITIONS: In an observation helicopter.

STANDARDS:

1. **P*.**

   a. Correctly perform FM radio homing.

   b. Correctly identify station passage.

2. **P/AO/AFSO.**

   a. Correctly configure the FM radio for homing.

   b. Correctly identify the station tuned.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION: During FM homing, the P* is assisted by the other crew member who configures the FM radio for homing and tunes and identifies the appropriate station. The other crew member also establishes contact with the station and specifies definite transmission and pause periods. He sets the mode control to HOMING and ensures that the OFF flag of the Radio Bearing Heading Indicator is not visible and that the signal strength indicator indicates adequate strength. The P* then tracks to the station by heading in a direction that will cause the steering indicator in the Radio Bearing Heading Indicator to center. To ensure that he is flying toward the station, the P* changes the heading when the steering indicator centers and checks to ensure that the steering indicator drifts in the opposite direction. While homing to the station, the P* changes the heading slightly (10 to 15 degrees) during transmissions and observes that the steering indicator continues to deflect in the opposite direction. The station approach indicator will move down as the station signal increases. If the steering indicator shows a turn in the same direction, the aircraft has passed the station. The P* should continue the turn and attempt to identify the station visually or to verify position.

REFERENCES:

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

TASK 2008

TASK: Perform evasive maneuvers.

CONDITIONS: In an observation helicopter in a simulated tactical environment with a tactical map or orally in a classroom environment.

STANDARDS:

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

2. **P/AO/AFSO.** Properly assist the P* in performing the evasive maneuver.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **P*.**

a. When engaged by enemy fire or upon receipt of a signal indicating acquisition by enemy radar, the P* will move to cover and perform the appropriate evasive maneuver. The specific maneuver performed will depend on the type of hostile fire. In the absence of immediate cover, some pointers are given below.

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

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

(3) Fighters. When in an area where enemy 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, turning sharply and maneuvering away once the attacker is committed may be advantageous. 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 and to avoid being attacked again.

(4) **Helicopters.** Use the appropriate air combat maneuvers to break contact with or evade threat helicopters.

(5) **Heat-seeking missiles.** Try to keep helicopter heat sources away from the enemy. If a missile is sighted, turn the tail of the helicopter away from the missile and mask the helicopter.

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

(7) **Artillery.** Depart the area and determine NBC requirements.

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

2. **P/AO/AFSO.** The P/AO/AFSO will assist the P* in performing the appropriate evasive maneuver. Report the situation according to the unit SOP when requested to do so by the P*. If the helicopter is hit by hostile fire, perform any duties directed by the P*. These may include checking all instruments and warning or caution lights and making a Mayday or Pan radio call.

NIGHT OR NVG CONSIDERATIONS:

1. Maintain proper scanning techniques to ensure obstacle avoidance and to prevent spatial disorientation.

2. Treat visual obstacles the same as physical obstacles.

REFERENCES:

Aircraft operator's manual
ASET Programs
FM 1-112
FM 1-203
Unit SOP

TASK 2009

TASK: Perform multiaircraft operations.

CONDITIONS: In an observation helicopter.

STANDARDS:

1. **P*.**

a. Correctly maneuver into the flight formation, as applicable.

b. Correctly change position in the flight when required.

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

2. **P/AO/AFSO.** Properly assist the P* in maintaining aircraft separation and obstacle clearance.

3. **Crew.** Properly perform crew coordination actions.

NOTE 1: Multiaircraft operations may or may not include formation flight; that is, battle position operations and holding area operations.

NOTE 2: A formation is a flight in which two or more aircraft are so close to each other that any movement of the lead aircraft must be duplicated by the others.

DESCRIPTION:

1. The P* will maintain visual reference outside the aircraft to remain clear and keep track of the other aircraft. Announce any maneuver or movement before it is executed.

2. The P/AO/AFSO will provide adequate warning to avoid traffic or obstacles detected in the flight path or identified on the map. He will inform the P* if contact with other aircraft is lost, the enemy is sighted, or if his attention is focused inside the aircraft.

3. Perform formation flight according to AR 95-1, TC 1-201, TC 1-204, and the unit SOP.

NIGHT OR NVG CONSIDERATIONS: Increase the interval between aircraft to a minimum of three rotor disks, and keep changes in the formation to a minimum. Both crew members must avoid fixation by using proper scanning techniques.

a. Night. During unaided night flight, position lights should be used.

b. NVG. The P/AO/AFSO will observe other aircraft in the formation and assist in maintaining aircraft separation and obstacle clearance.

REFERENCES:

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

TASK 2018

TASK: Reconnoiter and recommend an LZ or a PZ.

CONDITIONS: In an observation helicopter in a tactical environment or orally in a classroom environment.

STANDARDS:

1. Perform a map or photo reconnaissance of the assigned area.

2. Recommend areas that are suitable for use as landing or pickup zones.

3. Provide accurate and detailed information to supported units.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The criteria that the crew uses to select LZs or PZs are tactical, technical, and meteorological. When possible, the reconnaissance should be performed in a manner that will not compromise the actual location of the LZ or PZ. Evaluation of the LZ/PZ will be based on the proposed time the LZ/PZ will be used.

a. Tactical.

(1) Mission. The most important criterion in selecting an LZ is whether the mission can be accomplished flying 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 of the LZ. An aviation unit must depend to a great extent on the supported unit for active security.

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 at the same site in successive flights.

(2) **Landing formation.** If possible, aircraft should land in the same formation in which they are flying. Formations may require modification to land in restricted areas.

(3) **Loads.** Fully loaded helicopters require larger landing areas and better approach and departure routes.

(4) **Surface conditions.** Surface conditions must be firm enough to prevent helicopters from bogging down or creating excessive dust or blowing snow (possible foreign object damage). The reconnaissance will include an assessment of the ground slope (estimated or actual).

(5) **Size of landing zone.** Helicopters require a relatively level, clear area at least 25 to 80 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 (rocks, stumps, holes) must be noted.

(7) **Approach or departure direction.** The direction of the approach or departure should be over the lowest obstacles and generally into the wind, taking into account the location of enemy positions.

(8) **Vulnerability.** The site must provide good cover and concealment from enemy observation. Successive use of an LZ should be avoided to prevent the enemy from plotting artillery while aircraft are in the LZ.

c. **Meteorological.** Meteorological conditions must be evaluated, to include the ceiling, visibility, density altitude, and prevailing winds.

(1) **Ceiling.** The 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 because the lift capabilities of helicopters may be decreased.)

(4) **Prevailing winds.** The most important factor to be analyzed 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.

2. The P/AO/AFSO should record the LZ or PZ on a work sheet. This gives the commander a graphic illustration as well as tabulated information.

NIGHT OR NVG CONSIDERATIONS: TC 1-204 contains more information about night and NVG considerations.

REFERENCES:

Aircraft operator's manual
FM 1-116
FM 1-202
FM 90-4
TC 1-204

TASK 2019

TASK: Perform a route reconnaissance.

CONDITIONS: In an observation helicopter or orally in a classroom environment.

STANDARDS:

1. Correctly perform a route reconnaissance.

2. Make an accurate and detailed report.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew 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.

2. To perform a route reconnaissance, the crew must know certain information about the route. This information includes--

a. **Designation of the 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 the route.** This may be indicated by coordinates or any definite ground reference, such as a town, bridge, or road junction.

c. **Time of day the 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.

3. When the crew reconnoiters ground routes, they must check roads, bridges, tunnels, underpasses, and cross-country segments. They must also classify the route.

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 l\2-ton truck traffic but only one lane for Ml tanks.

(3) **Drainage.** This is an important consideration if the road surface is gravel, clay, or sand. The crown height determines how effective the drainage will be. 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 of more than 7 percent and sharp curves with less than a 25-meter radius reduce the suitability of the road and are likely enemy ambush sites.

(6) **Drive-off capability.** 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 P/AO/AFSO may have to dismount to make the classification. Bridges are reconnoitered to determine 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 to determine these classifications.

(1) **Construction type and condition (steel, concrete, wood, or brick).** If the bridge has received combat damage, it may need repair before use.

(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 l/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 by 6 truck or NATO equivalent can cross the obstacle within the immediate vicinity (within 4 miles or 6.5 kilometers and 15 minutes) of the bridge without work to improve the bypass.

(b) **Bypass difficult.** This means that the obstacle can be crossed within the immediate vicinity, but some work is required to prepare the bypass. If engineer or engineer 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 structure, constructing a new one, or establishing a detour. A detour is an alternative route which crosses the obstacle at some distance from the original site.

c. **Cross-country segments.** The crew must conduct a careful reconnaissance of critical terrain 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 a 2 1/2-ton truck) of the narrowest portion of the route.

(2) Type. Road surface types are X, Y, and Z.

(a) All-weather (type X). A type X road is, with reasonable maintenance, 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 heaviest class of vehicles in the convoy that can use the entire route. This is normally governed by the load-bearing capacity of the weakest bridge on the route. Otherwise, it is the load-bearing capacity of the road surface. Load-carrying capacity is classified as light (less than 5 tons), medium (5 to 60 tons), and heavy (greater than 60 tons).

4. 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 antiaircraft areas, overwater routes, and mountainous areas.

5. 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.

6. There are many acceptable methods that the crew 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 route reconnaissance and classification.)

NIGHT OR NVG CONSIDERATIONS: A route reconnaissance conducted with NVG is performed basically the same as during the day; however, the reconnaissance will take longer, and the aircrew will have to get closer to look at specific points of interest along the route.

REFERENCES:

Aircraft operator’s manual
FM 1-116
FM 5-36
Unit SOP

TASK 2020

TASK: Call for and adjust indirect fire.

CONDITIONS: In an observation helicopter in a training or tactical environment with an artillery unit or orally in a classroom environment.

STANDARDS:

1. **P*.**

a. Remain oriented on the target while relocating the aircraft.

b. Properly mask and unmask the aircraft as required.

2. **P/AO/AFSO.** Accurately adjust indirect fire using the correct call for fire.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION:

1. **Planned Targets.** These 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.

2. **Unplanned Targets.** Targets of opportunity are normally engaged by shifting from a known point. Subsequent adjustments are made based on a spotting line.

3. **Target Location.** Target location is transmitted in one of three ways:

a. As a specific grid coordinate (normally to the nearest 100 meters) such as grid DR 123456.

b. As a known point such as those preplanned targets using the target designator (target AB 1002).

c. As a shift from a known point (using AB 1002), “Direction, 030 degrees, right 400, add 400.”

4. **Spotting Line.** The spotting line could be the GT line if the location of the artillery and its relationship to the target are known. The GT line is used when no other line is given. The reference line is normally the OT line. When this technique is used, the direction should be sent to the nearest 10 percent; for

example, “Direction 120 degrees magnetic” or “grid.” The observer may also select a terrain feature, such as a ridgeline, railroad track, or canal, that provides a reference line. Although the observer may use cardinal direction, it is the least accurate method, therefore, the least preferred.

5. Call-for-Fire Elements.

a. Observer identification (appropriate call sign).

b. Warning order (type of mission, such as adjust fire, fire for effect, suppress, or immediate suppression; a call to shift from a known point; and the method of target location).

c. Location of target (grid coordinates, preplanned target numbers, or other data such as the direction, left or right, or add or drop from a known point.)

d. Description of target (for example, ”infantry in the open”).

NOTE: An accurate target description will allow the FDC to choose the best method of engagement.

e. Method of engagement (type of adjustment, trajectory, ammunition, and distribution). Area fire, low angle, high explosive, and circular distribution are the respective standards for those subelements.

f. Method of fire and control (for example, “at my command”).

6. Procedures.

a. The crew acquires the target; the P* relocates the aircraft. The crew locates the target using one of the methods in 5c above. Then the crew prepares to transmit the call for fire through the field artillery channel. The P* continues to relocate the aircraft, if necessary, while remaining oriented on the target.

b. Field artillery will return with a message to the observer, which should include the time of flight of the rounds. The crew can use this information to compute the time of impact and unmask the aircraft just as the rounds impact. The crew may will receive ”splash,“ which provides a time hack of five seconds before impact.

NOTE: The P* should not unmask the aircraft in the same place twice.

c. If an adjustment is needed, the crew will send corrections using either the original spotting line or a new spotting line. If the crew uses a new spotting line that is more than 10 degrees from the original spotting line, field artillery must be informed.

d. The procedure is continued until the target is neutralized. The crew sends an ”end of mission” message with a battle damage assessment or an “unable to observe” message.

REFERENCES:

FM 6-30
TC 6-40

TASK 2023

TASK: Perform installation and loading of weapons.

CONDITIONS: In an observation helicopter with ATAS or captive flight training systems installed in a training or tactical environment or orally in a classroom environment.

STANDARDS:

1. Properly ground the aircraft before arming or dearming.

2. Properly arm and dearm the aircraft to include installing and removing the missile and the argon gas bottle.

3. Correctly perform crew coordination actions.

WARNING

Ensure that electrically fired ammunition is loaded away from electrical and radar sources.

DESCRIPTION: The crew will ensure that the aircraft is properly grounded and the weapon system is properly loaded. The crew will thoroughly inspect the weapon system for serviceability and determine the type of Stinger missile to be loaded; for example, basic, RMP, or basic and RMP mix.

REFERENCE:

TM 9-1440-431-23

TASK 2024

TASK: Perform a preflight inspection of weapon systems.

CONDITIONS: In an observation helicopter with the ATAS or captive flight training system installed.

STANDARDS:

1. PC. Without error, perform a preflight inspection on the ATAS system according to the aircraft operator's manual and the operator's and crewmember's checklist.

2. P/AO/AFSO. Without error, perform preflight checks as directed by the PC.

3. Crew. Correctly perform crew coordination actions.

WARNING

Ensure that electrically fired ammunition is loaded away from electrical and radar sources.

DESCRIPTION: The crew will check each item in sequence as described in the aircraft operator's manual and ensure that the ATAS is properly installed.

REFERENCES:

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

TASK 2031

TASK: Engage target with the ATAS.

CONDITIONS: In an observation helicopter with the ATAS or captive flight training system installed, during the day, at night, or under NVG.

STANDARDS:

1. **P* (Right Seat).**

a. Visually acquire the target and identify it as friend or foe.

b. Properly place the system into operation.

c. Select the type of missile and the method of engagement.

d. Properly engage the target.

2. **P/AO/AFSO.**

a. Assist in acquiring the target and identifying it as friend or foe.

b. Without error, set and position switches on the ATAS control panel as directed.

c. During the engagement, assist in monitoring aircraft instruments and the attitude indicator and in clearing the aircraft.

3. **Crew.** Correctly perform crew coordination actions.

DESCRIPTION: The crew will visually acquire and identify the target as friend or foe. The crew will estimate the range to the target using the map or visual cues and ensure that the system is armed. The crew will select the firing techniques based on the enemy situation, target, terrain, atmospheric conditions, and aircraft position. The P* will align the target acquisition reticle with the selected target. He will place the uncage/fire switch to the first detent and ensure that the seeker square tracking reticle aligns with the selected target. Once an acceptable tone level is achieved, he will superelevate the aircraft and place the uncage/fire switch to the second detent for at least 2 seconds to launch the missile.

a. <u>Engagement at a hover.</u> Hover fire is normally conducted with the aircraft unmasked and operating below ETL. Sufficient altitude and maneuver space must be available within the firing position when using this type of engagement.

b. <u>Engagement in flight.</u> This is normally conducted above ETL airspeeds while climbing, diving, or in level flight. Engagements in flight take advantage of the stability attained from forward speed and allow increased target acquisition and tracking capabilities. The crew should break contact before entering the threat weapons capability area, if possible.

NOTE 1: Hover fire is required for qualification, refresher, and APART flight evaluations.

NOTE 2: Acquisition ranges may be degraded when tracking targets with terrain in the background.

NIGHT OF NVG CONSIDERATIONS: Drift and aircraft pitch attitude are difficult to detect under low ambient light conditions at altitude. The P/AO/AFSO must monitor aircraft position, altitude, and drift and inform the P* of any unsafe conditions.

NOTE: While operating the ATAS system, the P* must be aware of the possibility of NVG contact with the PDU.

REFERENCES:

Aircraft operator's manual
FM 1-112
FM 1-116
Unit SOP

TASK 2034

TASK: Safe and clear weapon systems.

CONDITIONS: In an observation helicopter with the ATAS or captive flight training system installed.

STANDARDS:

1. Properly safe and clear the ATAS.
2. Correctly perform crew coordination actions.

DESCRIPTION: The crew will safe and clear the ATAS. The crew will ensure that the ATAS control panel is placed in the OFF position and the jettison pins and IR covers are installed according to the aircraft operator's manual.

REFERENCE:

Aircraft operator's manual

TASK 2040

TASK: Select a combat position.

CONDITIONS: In an observation helicopter in a training or tactical environment or orally in a classroom environment.

STANDARDS:

1. Apply the proper criteria in selecting the observation posts, battle positions, and firing positions.

2. Correctly perform crew coordination actions.

DESCRIPTION: A combat position is a specified point within the battle area that is occupied by reconnaissance and/or attack helicopters. The crew selects the combat position based on the tactical mission requirements. This position is a covered, concealed position that provides observation and/or fields of fire into an engagement area. Selection of the combat position should be based on the following considerations:

a. **Background.** Firing and observation positions should be located so that the helicopter will not be silhouetted.

b. **Range.** The combat position should be located so that the engagement area is within the last one-third of the weapon/ observation range.

c. **Altitude.** To enhance the view of the target, the combat position should be level with or higher than the engagement area, if possible.

d. **Sun or full moon.** The combat position should be located so that the sun or full moon is behind or to the side of the helicopter.

e. **Shadow.** When possible, the combat position should be within an area covered by shadow.

f. **Concealment.** Vegetation and terrain surrounding the combat position should allow the helicopter to remain masked from threat ground and air elements.

g. **Rotor wash.** The location of the combat position should reduce the effect of rotor wash on surrounding debris, trees, snow, or dust.

h. **Area to maneuver.** The area surrounding the combat position should permit easy ingress and egress and provide adequate space to disperse when multiple aircraft operate in the position.

i. __Fields of fire.__ The combat position should be located so that it provides mutually supported fields of view and fire throughout the engagement area.

j. __Obstacle clearance.__ The height of vegetation, terrain, and man-made obstacles in the combat position must be considered. High-density altitude makes hovering heavily loaded aircraft out-of-ground effect difficult.

NOTE: When the combat position is a battle position, the crew should also consider the types of targets and the way the targets present themselves in the engagement area. The battle position should be located to the flanks and rear of the enemy force and be large enough so that each aircraft has several firing positions.

REFERENCES:

FM 1-112
FM 1-116
Unit SOP

TASK 2054

TASK: Perform target handover to an attack helicopter.

CONDITIONS: In an observation helicopter in a training or tactical environment or orally in a classroom environment.

STANDARDS:

1. Use the five elements of target handover without error.

2. Use the communications procedure that will best accomplish the mission.

3. Provide the proper security during the attack.

4. Correctly perform crew coordination actions.

DESCRIPTION: Using the proper radio phraseology, SOI procedures, or SAM cards, the crew will alert the attack helicopter and describe the target and give its location. In some cases, the attack helicopter may need to be escorted from its holding area to an attack or firing position to engage the target. The method for locating the target, the execution command, and postattack method should be clearly understood by both the scout and the attack aircrews. The standardized elements for target handover are as follows:

a. **Alert and target description.** This alerts the attack helicopter that a target handover is about to occur. It identifies the sender and describes the target (type, number, and activity); for example, "K13 (AH-1S), this is K06 (OH-58), three tanks and four BMPs moving west."

b. **Target location.** The scout gives the direction of the target in degrees and range from the battle position (for example, "120 degrees at 2,800 meters"). The scout may reference from a known point (for example, the target reference point or the engagement area) or use grid coordinates.

c. **Method of Attack.** The scout describes the planned scheme of maneuver, fire distribution, and maneuver for the attack; for example, "Attack targets west of north-south road."

d. **Execution.** The scout gives the command to initiate the attack. The two commands are as follows:

(a) **"At my command."** The attack helicopter engages when the scout says "fire."

(b) **”When ready.”** The attack helicopter fires when ready. “When ready” is assumed when no other command of execution is given.

e. **Post attack method.** The attack helicopter unmasks to evaluate the effect on the target and begins planning subsequent engagements. The scout describes ingress and egress routes into new positions; for example, “Move to holding area 4; on order, attack from battle position 21.”

NOTE: The minimum information for a target handover includes ID, target, and location; for example, ”B16, this is B45, armored vehicles, 270 degrees, 2,000 meters, over.” A target handover is also used to direct suppressive fires when being engaged by the enemy; for example, ”This is B45, taking fire, 2 o’clock, 500 meters, breaking left.”

REFERENCES:

FM 1-112
FM 1-116
Unit SOP

TASK 2061

TASK: Reconnoiter and recommend a holding area.

CONDITIONS: In an observation helicopter in a training or tactical environment or orally in a classroom environment.

STANDARDS:

1. Correctly determine whether an area is suitable for use as a holding area by considering all of the following:

a. Cover and concealment.

b. Obstacles.

c. Key terrain.

d. Avenues of approach and departure.

e. Security.

2. Correctly perform crew coordination actions.

DESCRIPTION: During premission planning, the crew should select tentative areas that are suitable as holding areas. In selecting the areas, the crew considers cover and concealment, obstacles, key terrain, avenues of approach and departure, and security. Areas selected should also be free of sources of rotor wash signature and large enough to provide dispersion. If the tactical situation warrants, the crew should verify whether the predetermined areas are suitable for use as holding areas.

REFERENCES:

FM 1-112
Unit SOP

TASK 2063

TASK: Perform a security mission.

CONDITIONS: In an observation helicopter in a training or tactical environment or described orally in a classroom environment.

STANDARDS:

1. Use the five fundamentals of security to correctly perform screen, guard, cover, or rear area missions.

2. Correctly perform crew coordination actions.

DESCRIPTION: The aeroscout mission in all security operations is reconnaissance. Air cavalry units may conduct security operations as an integral part of a larger unit's task organization.

a. **<u>Fundamentals of security.</u>** In performing the security mission, the crew must know the five fundamentals of security. They are briefly defined below.

(1) **<u>Orient on the main body.</u>** A security force operates between the main body and known or suspected enemy units.

(2) **<u>Perform continuous reconnaissance.</u>** A security force performs continuous and aggressive reconnaissance to gain all possible information about the enemy and the terrain. The security force employs the fundamentals of reconnaissance. These fundamentals are--

(a) To orient on the location or movement of the reconnaissance objective.

(b) To report all information rapidly and accurately.

(c) To retain freedom to maneuver.

(d) To gain and maintain enemy contact.

(e) To ensure that the maximum reconnaissance forces are forward.

(f) To develop the situation rapidly.

(3) **<u>Provide early and accurate warning.</u>** Early warning of enemy activity includes accurate reports about the enemy's size, composition, location, movement, and special equipment. This gives the main body commander the time and information needed to seize the initiative and choose the time and place to engage the enemy.

(4) **Provide reaction time and maneuver space.** A security force operates as far from the main body as possible, consistent with the factors of METT-T. It fights to ensure that the main body has adequate time and space to respond to the threat.

(5) **Maintain enemy contact.** Once gained, contact is maintained to ensure a continuous flow of information about enemy activity. As in reconnaissance operations, maintaining enemy contact prevents the enemy from achieving the element of surprise.

b. **Types of security missions.** The major types of security missions that the crew may help to conduct are screen, guard, cover, and rear area. Each is briefly described below.

(1) **Screen.** Screen operations maintain surveillance and provide early warning by maintaining contact with enemy forces that have been encountered. A screening force impedes and harasses the enemy with organic and supporting fires and, within its capability, destroys or repels enemy patrols.

(2) **Guard.** Guard operations are conducted to gain early warning, reaction time, and maneuver space to the front, flank, or rear of a moving or stationary force. A guard force reconnoiters, screens, attacks, and defends to accomplish the mission.

(3) **Cover.** Cover operations give the main body information about the enemy, early warning, reaction time, and maneuver space. A covering force is a tactically self-contained security force that operates at considerable distance from the front, flank, or rear of a moving or stationary force. The mission of a covering force is to develop the situation early and defeat the enemy. If the covering force cannot defeat the enemy, it will deceive, delay, and disorganize the enemy until the force being covered can react.

(4) **Rear area operations.** Rear area operations differ in orientation but not in type. The crew normally performs these missions as part of its parent squadron or regiment. The missions are conducted to provide rear security and reconnaissance. These include protection of installations and units, denial of drop or landing zones, surveillance of landing zones, actions against stay-behind forces, actions against enemy penetrations, and reconnaissance of main supply routes.

REFERENCES:

FM 1-116
Unit SOP

TASK 2064

TASK: Perform an aerial radiological survey.

CONDITIONS: In an observation helicopter in a simulated tactical NBC environment or orally in a classroom environment and given a tactical map, the mission, atmospheric conditions in the area to be surveyed, and DA Form 1971-R (Radiological Data Sheet Monitoring and Point Technique) or DA Form 1971-1-R (Radiological Data Sheet Route Technique or Course Leg Technique).

STANDARDS:

1. Plan and conduct a simplified or detailed aerial survey by using the correct technique (route, course leg, or point).

2. Select a specific location for the survey meter in the aircraft to obtain accurate dose-rate readings for determining the air-ground correlation factor.

3. Accurately record and report information determined from the aerial survey.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The two types of aerial surveys used by the crew are simplified and detailed. The techniques used to conduct these surveys are point, route, and course leg.

a. **Point technique.** The procedure for using the point technique depends on the situation. When the situation permits, readings are taken by dismounting from the aircraft. When the situation does not permit, the ground dose rate is estimated by using the air-ground correlation factor and an aerial dose-rate reading.

b. **Route technique.** The route technique involves the P*'s flying between two checkpoints, following a route or a prominent terrain feature such as a road.

c. **Course-leg technique.** The course-leg technique involves the P*'s flying a straight-line course between two checkpoints. The procedure for obtaining dose-rate information between checkpoints is the same for both the route and the course-leg techniques.

2. The crew must select a specific location in the aircraft for the survey meter. All dose-rate readings must be made with the meter in that location. Dose-rate readings are used to determine the air-ground correlation factor. The air-ground correlation factor is the ratio of a ground dose-rate reading to a reading taken at approximately the same time in an aircraft over the same point on the ground.

3. Information obtained by using the point technique is recorded on DA Form 1971-R. Information obtained by using the route or course-leg technique is recorded on DA Form 1971-1-R. Information collected during the survey is delivered to the control party by physical drop, avionics, or telephone.

REFERENCES:

FM 3-3
Unit SOP

TASK 2066

TASK: Perform a zone reconnaissance.

CONDITIONS: In an observation helicopter with a mission briefing completed or orally in a classroom environment.

STANDARDS:

1. Conduct thorough premission planning.

2. Conduct a detailed map reconnaissance.

3. Make specific and timely reports about information obtained during the zone reconnaissance.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew conducts a zone reconnaissance to obtain detailed information about all 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.

2. After receiving the mission assignment, the crew should conduct a detailed map reconnaissance and analyze the known enemy situation according to the factors of METT-T. Then the P* should select the mode of terrain flight and technique of movement that will best accomplish the mission. (Task 1035 describes terrain flight modes, and Task 1093 describes techniques of movement.)

3. Before departing on the mission, the crew should confirm the radio frequencies and call signs of other teams as well as the available artillery support. In addition, the crew must be prepared to call for artillery support.

4. The crew must report the evidence or absence of enemy activity. Reports must be timely and specific. For example, say "three T-80 tanks" rather than "one tank platoon." The crew must also provide specific reports about route conditions, checkpoint times, and any other requested information.

REFERENCES:

FM 1-116
Unit SOP

TASK 2067

TASK: Perform an area reconnaissance.

CONDITIONS: In an observation helicopter in a training or tactical environment or orally in a classroom environment.

STANDARDS:

1. Conduct thorough premission planning.

2. Conduct a detailed map reconnaissance.

3. Make specific and timely reports about information obtained during the area reconnaissance.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The crew conducts an area reconnaissance 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.

2. After receiving the mission, the crew 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 crew 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 bypassed, if possible.

3. 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 may be reconnoitered 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, tunnels, and fords.

4. The crew must report any enemy forces encountered en route. It must also complete the area reconnaissance quickly and coordinate passage into and out of friendly lines carefully.

REFERENCES:

FM 1-116
Unit SOP

CHAPTER 7

MAINTENANCE AIRCREW TASKS

This chapter describes those maneuvers and procedures that are essential for maintaining maintenance and aircrew skills. Tasks will be performed for both training and evaluation. Tasks in this chapter will be performed only when a qualified and current MP/ME is occupying a position with access to the flight controls. If discrepancies are found between this chapter and the MTF manual, the MTF manual takes precedence.

7-1. TASK CONTENTS

a. <u>Task Number and Title.</u> Each task is identified by a number and a title which correspond to the tasks listed in Chapter 5 (Figures 5-4 and 5-5).

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

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

d. <u>Description.</u> The description explains how the task should be done to meet the standards. It includes individual and crew-coordinated actions that are to be performed as indicated by the MP (maintenance test pilot), P*, P, PI, CPO, and CE. During MTFs, the MP will be the PC. When the MP (P*) flies the aircraft solo, he will perform all actions described in the task.

e. <u>References.</u> The references listed for each task are sources of information about that particular task.

NOTE: Unless otherwise stated in the conditions, neither a PI, CPO, nor CE is required for maintenance test flights.

7-2. INDIVIDUAL AND CREW-COORDINATED ACTIONS

a. <u>Individual Actions.</u> 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 the P for their designated seat positions.

b. <u>Crew-Coordinated Actions.</u> These portions of a task require the interaction of the entire crew to ensure safe, efficient, and effective task execution.

TASK 2700

TASK: Perform prior-to-maintenance-test-flight checks.

CONDITIONS: In an OH-58A/C and given TMs 55-1520-228-10 and 55-1520-228-CL.

STANDARDS:

1. Without error, perform the preflight inspection according to TM 55-1520-228-10 or TM 55-1520-228-CL.

2. Correctly check and perform all items in sequence.

3. Correctly determine aircraft suitability for flight.

4. Determine the maneuvers, checks, and tasks required during the test flight.

5. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The MP will ensure that the preflight is conducted according to TM 55-1520-228-10 or TM 55-1520-228-CL. He will review all forms and records and ensure that the appropriate information is entered on DA Forms 2408-12 and 2408-13.

2. The crew member(s), if available, will assist the test pilot in completing the preflight.

3. The MP will determine the maneuvers or checks necessary for the maintenance test flight. The crew will use additional publications and references as necessary. The MP will brief the crew member(s) and any supporting ground crew members concerning operation around or on the helicopter and ensure that the ground communication capability is adequate. He will stress any applicable safety considerations or procedures during the briefing.

4. The MP will ensure that a walk-around inspection is completed following the preflight.

REFERENCES:

AR 95-1
AR 95-3
TM 55-1520-228-10
TM 55-1520-228-23 series
TM 55-1520-228-CL
TM 55-1520-228-MTF
TM 55-2840-231-23
TM 55-2840-241-23

TASK 2702

TASK: Perform before-starting engine checks.

CONDITIONS: In an OH-58A/C helicopter and given TM 55-1520-228-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-228-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunction or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will call out all the required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions that have been marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce when the checks are completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2704

TASK: Perform starting engine checks.

CONDITIONS: In an OH-58A/C helicopter and given TM 55-1520-228-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-228-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will call out the required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions that have been marked with an asterisk or any abnormal conditions noted by the P*.

2. The P*, the P, and the ground crew member(s), if available, will clear the area around the aircraft before starting the engine.

3. Before starting the engine, the crew will ensure that all of the appropriate internal and external lights are operational and properly set.

4. The P* will announce the initiation of the engine start and the appropriate items to be recorded during the start sequence; for example, peak TOT and the duration of start time.

REFERENCES:

TM 55-1520-228-10
TM 55-1520-228-MTF

TASK 2706

TASK: Perform engine run-up checks.

CONDITIONS: In an OH-58A/C helicopter and given TM 55-1520-228-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-228-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce when the checks are completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2708

TASK: Perform baseline and normal engine health indicator test.

CONDITIONS: In an OH-58A/C helicopter or orally and given TM 55-1520-228-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-228-MTF.

2. Correctly check and perform all items in sequence.

3. Use the appropriate HIT log or work sheet.

4. Note and record the required readings on the HIT log.

5. Ensure that all computations on the work sheet are correct if a new baseline HIT is established.

6. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

The P will use the HIT log to perform the HIT check. The MP will use the computation sheet to perform the baseline HIT and follow the procedures printed on the HIT log or work sheet.

NOTE: Under no circumstances will a new baseline HIT be established unless the aircraft has passed an engine performance check.

REFERENCES:

TM 55-1520-228-MTF
TM 55-2840-231-23
TM 55-2840-241-23

TASK 2710

TASK: Perform before-takeoff check.

CONDITIONS: In an OH-58A/C helicopter and given TM 55-1520-228-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-228-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine malfunctions or discrepancies and apply the corrective actions\troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce when the checks are completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2712

TASK: Perform takeoff to a hover.

CONDITIONS: In an OH-58A/C helicopter with the before-takeoff check completed.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Note cyclic, collective, and pedal control responses.

3. Maintain a 3-foot hover, ±1 foot.

4. Note the center of gravity.

5. Note droop compensation.

6. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will ensure that all controls and instrument indications are normal, announce his intention to bring the aircraft to a stationary hover, and keep a visual reference outside the aircraft. He will then increase the collective with smooth, positive pressure and apply antitorque pedals as needed to maintain heading while adjusting the cyclic to achieve a vertical ascent. The P* will also note that the apparent center of gravity is normal and that no excessive control displacement is required during the ascent. He will adjust the collective to maintain the desired altitude and check to ensure that N2 is 103 percent on the OH-58A and 100 percent on the OH-58C/A+. While hovering the aircraft into the wind, the P* will note that the CG and the cyclic, collective, and pedal positions are normal for the conditions.

2. The P will verify that all system instruments are in normal ranges for the conditions and record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

REFERENCE:

TM 55-1520-228-MTF

TASK 2714

TASK: Perform hover power check.

CONDITIONS: In an OH-58A/C helicopter with the takeoff-to-a-hover check complete.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 2-foot hover, ±1 foot.

4. Record the required readings.

5. Check to ensure that the indicated torque is in agreement with the performance planning card (±4 psi on the OH-58A and 4 percent on the OH-58C/A+.

6. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P* will announce all the required checks in sequence according to TM 55-1520-228-MTF. The P will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform the check at a stabilized 2-foot hover into the wind and keep a visual reference outside the aircraft. He will have the P record the torque, TOT, and N1. The P* will determine that the readings are within normal limits, compare the torque with the PPC, and apply Task 1016 (Perform hover power check), as appropriate. After checking the parking area for any indication of leaks and announcing that the check is completed, the P* will hover the aircraft to the test-flight hover area.

REFERENCES:

TM 55-1520-228-10
TM 55-1520-228-MTF

TASK 2716

TASK: Perform hovering turns.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Maintain a 3-foot hover, ±1 foot.

3. Position the aircraft into the wind.

4. Perform left and right turns of 90 degrees to each side of the wind direction.

5. Perform turns not to exceed 90 degrees in 4 seconds.

6. Note tail rotor response and rigging.

7. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. The P will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will apply pressure on the desired pedal to begin the turn and use pressure and counterpressure on the pedals to maintain a constant rate of turn. (The P* will note that excessive control inputs are not required during the maneuver and that the desired aircraft response is achieved.) He will make hovering turns to the left and right (90 degrees to either side of the wind direction) and announce that the check is completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2718

TASK: Perform sideward flight.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 3-foot hover, ±1 foot.

4. Maintain a flight path that is approximately perpendicular to the wind direction.

5. Do not exceed a ground speed of 5 knots.

6. Correctly determine malfunctions or discrepancies and apply the corrective actions\troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will perform sideward flight in both directions with the aircraft positioned into the wind. (The P* will note that excessive control inputs are not required during the maneuver and that the desired aircraft response is achieved.) After the P* centers the cyclic, the aircraft should drift to a stop. He then announces that the check is completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2720

TASK: Perform forward hovering flight.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 5-foot hover, ±1 foot.

4. Note the response of the cyclic and the tail rotor pedals.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 5-foot hover into the wind and keep a visual reference outside the aircraft. He will apply enough forward cyclic to accelerate to, but not through, ETL. (The P* will note that excessive control inputs are not required during the maneuver and that the desired aircraft response is achieved.) After reaching ETL, he will return the aircraft to a stabilized 3-foot hover and announce that the check is completed.

NOTE: A 5-foot hover altitude will ensure that the tail rotor does not strike the ground during the maneuver.

REFERENCE:

TM 55-1520-228 MTF

TASK 2722

TASK: Perform pylon isolation mount check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 3-foot hover, ±1 foot.

4. Induce an extremely low frequency vibration into the aircraft.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will move the cyclic approximately one to two inches at a rate that will induce an extremely low frequency vibration. The P* will then neutralize the cyclic and note the number of cycles (beats) required to dampen pylon rocking. He will note that the vibrations dampen within five cycles and that no abnormal vibrations or engine surges occur. The P* will announce that the check is completed.

NOTE: The hydraulic caution light may illuminate during this check. This is normal as long as neither the cyclic nor the collective control has any feedback.

REFERENCE:

TM 55-1520-228-MTF

TASK 2724

TASK: Perform power cylinder check.

CONDITIONS: In an OH-58A/C helicopter with a PI, CPO, or CE.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Ensure that the MP completes the safety briefing according to TM 55-1520-228-MTF.

4. Maintain a 10-foot hover altitude, +5 feet, -2 feet.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 10-foot hover into the wind and keep a visual reference outside the aircraft. To check the right cyclic servo, the P* will smoothly move the cyclic several times (approximately 6 inches to both sides of center) along a 45-degree line from the left-rear quadrant to the right-forward quadrant. To check the left cyclic servo, he will move the cyclic from the right-rear quadrant to the left-forward quadrant. (The P* will note the operation of the right and left cyclic servos to ensure that movement is smooth and without restriction.) The P* will return the aircraft to a stabilized 3-foot hover and announce that the check is completed.

NOTE 1: The crew member not on the controls will hold the HYD switch throughout the check and verify that the master caution and HYD PRESS caution lights do not illuminate during the check.

NOTE 2: The power cylinder check is primarily a flow capacity check of the hydraulic pump and a secondary check of servo extension.

REFERENCE:

TM 55-1520-228-MTF

TASK 2726

TASK: Perform engine response check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind at a 3-foot hover, ±1 foot.

3. Ensure that aircraft altitude does not exceed 50 feet AGL.

4. Note engine response.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will then make a positive increase in the collective pitch. The engine should respond smoothly and rapidly. (The P* will ensure that N1 increases in less than 1 second, allow N2 to recover within 5 seconds, and reduce the collective before too much altitude (50 feet) is gained.) He will then announce that the check is completed.

CAUTION

Do not exceed engine limitations.

NOTE: The engine response check tests the response of the engine when a moderate power demand is placed on it.

REFERENCE:

TM 55-1520-228-MTF

TASK 2728

TASK: Perform takeoff and climb check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Without error, perform a takeoff and climb check according to TM 55-1520-228-MTF.

3. Correctly check and perform all items in sequence.

4. Perform the check at 60 KIAS and at a rate of climb of 500 FPM.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover in the direction of takeoff and keep a visual reference outside the aircraft. During the takeoff and climb, he will ensure that control positions and instrument indications are normal for the conditions. The P* will check for any abnormal conditions or unusual vibrations, initiate a fuel consumption check, and announce that the check is completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2730

TASK: Perform control rigging check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain an airspeed of 100 KIAS, ±5 KIAS.

4. Maintain torque at 60 psi for the OH-58A and at 65 percent for the OH-58C/A+.

5. Maintain the aircraft in trim.

6. Note cyclic and pedal positions.

7. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind from an altitude that will allow safe recovery and keep a visual reference outside the aircraft. While maintaining the appropriate airspeed, torque, and trim, he will turn the force trim on and note that the cyclic is almost laterally centered. The P* will relax the cyclic pressure and note that the cyclic remains in place. After he completes the cyclic check, the P* turns the force trim off. He will then ensure that the aircraft is in trim and note (on the pilot's side) that the position of the right pedal is approximately one to two inches forward of the left pedal. (After the specifications in MWO 55-1520-228-50-25 have been complied with, one-half of an inch of forward right pedal is normal.) The P* will relax pressure on the pedals and check to ensure that there is no pedal creep. He will announce that the check is completed.

NOTE: The control rigging check verifies proper tail rotor rigging.

REFERENCES:

MWO 55-1520-228-50-25
TM 55-1520-228-23-1
TM 55-1520-228-23-2
TM 55-1520-228-MTF

TASK 2732

TASK: Perform autorotation RPM check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Ensure that the aircraft is within gliding distance of a suitable landing area.

4. Complete the power recovery before reaching 500 feet AGL.

5. Maintain an airspeed of 55 KIAS, ±5 KIAS.

6. Note N1, trim, vibrations, and torque and correctly record rotor RPM.

7. Perform the correct power recovery procedure.

8. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

9. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will establish radio communications for maneuver coverage and verify that the landing area is suitable. He will position the aircraft into the wind at an altitude that will allow a safe recovery and keep a visual reference outside the aircraft. While maintaining 55 KIAS, the P* will smoothly lower the collective to the full-down position and note that the main rotor does not overspeed. After ensuring that he can reach a suitable landing area, the P* will retard the throttle to the engine-idle position and note that the rotor and N2 needles split and that N1 is stabilized at engine idle. The P* will check to ensure that the torque is less than 10 (psi or percent) and that no warning or caution lights are illuminated. He will also ensure that no unusual vibrations, abnormal conditions, or control positions exist and the aircraft is in trim. He will

ensure that the rotor RPM is within limits and note the exact rotor RPM indication. He will then perform a power recovery by slowly advancing the throttle to the-full-open-position and ensuring that the N2 and rotor needles are joined and stabilized before he increases the collective. The P* will establish a climb before he reaches 500 feet AGL and announce that the check is completed.

REFERENCES:

TM 55-1520-228-23-1
TM 55-1520-228-23-2
TM 55-1520-228-MTF

TASK 2734

TASK: Perform engine performance check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.
2. Position the aircraft into wind.
3. Maintain cruise flight at 500 feet AGL or above.
4. Set the altimeter to 29.92.
5. Establish a climb, and maintain 70 KIAS, ±5 KIAS.
6. Do not exceed aircraft limitations.
7. Correctly record the appropriate readings at test altitude.
8. Reset the altimeter to the current reading.
9. Correctly analyze EPC data.
10. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.
11. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind during cruise flight at 500 feet AGL or above. He will preplan a "maximum torque available" at the selected test altitude. The P* will then set the altimeter to 29.92 and, based on existing weather conditions, ensure that all bleed air is off. He will initiate a climb at 70 KIAS to 500 feet below the selected test altitude while he monitors engine and flight instruments. At approximately 200 to 300 feet (prior to reaching the test altitude), the P* will slowly increase the collective so that he achieves the maximum limit of TOT, N1, or torque at 103 percent N2 for the OH-58A or 100 percent for the OH-58C/A+ by the time he reaches the test altitude. The P will record the torque, Nl, TOT, PA, and OAT. The P* will ensure that any N2 droop recovers within 5 seconds. Before continuing the test flight, the P* will verify the OAT at the selected test altitude, reset the altimeter to the current altimeter setting, and determine if the required torque was attained. He will then announce that the check is completed.

NOTE 1: If the weather permits, engine performance checks in the OH-58C/A+ should be accomplished at an altitude that has a predicted maximum torque available of less than 100 percent.

NOTE 2: This maneuver will be accomplished so that when maximum power is achieved, the aircraft will be in a position to reach a safe landing area.

REFERENCE:

TM 55-1520-228-MTF

TASK 2736

TASK: Perform hydraulics-off check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain an airspeed of 70 KIAS, ±10 KIAS.

4. Ensure that the MP completes a safety briefing according to TM 55-1520-228-MTF.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind from an altitude that will allow a safe recovery and keep a visual reference outside the aircraft. He will direct the P to turn the HYD switch off and reset the master caution light. The P* will check to ensure that the cyclic control forces are normal for the conditions and check aircraft controllability by entering shallow right and left turns. The P* will decrease and increase the collective to ensure that at least 17 percent torque down and 83 percent torque up (on the OH-58C/A+) and 16 psi down and 76 psi up (on the OH-58A) can be reached without excessive pressure on the collective and without exceeding aircraft limitations. The P* will then stabilize the controls, relax the pressure on the collective, and announce that the check is completed.

3. When directed by the P*, the P will place the HYD boost switch in the OFF position, acknowledge that the hydraulic pressure caution light is illuminated, and reset the master caution light. He will place the HYD boost switch in the ON position when directed to do so by the P*.

4. The P* will direct the P to record the minimum and maximum torque achieved.

> **CAUTION**
>
> Do not exceed aircraft limitations. In warmer temperatures, an OH-58A may be unable to attain 76 psi because of TOT limits.

NOTE 1: The P* should relax control pressures before the P places the HYD boost switch in the ON position.

NOTE 2: The hydraulics-off check allows the aircrew to check for twisted TT straps in the main rotor system and for maneuverability with the hydraulics off.

REFERENCE:

TM 55-1520-228-MTF

TASK 2738

TASK: Perform flight instruments check.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Correctly check flight instruments.

3. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind at an altitude that will allow a safe recovery and keep a visual reference outside the aircraft. He will verify that the flight instruments correlate with other supporting instrument indications. The P* will perform functional checks by using timed turns, climbs, descents, and known power settings. He will then announce that the check is completed.

REFERENCES:

TM 55-1520-228-10
TM 55-1520-228-MTF

TASK 2740

TASK: Perform communication and navigation equipment checks.

CONDITIONS: In an OH-58A/C helicopter or orally.

STANDARDS:

1. Check all avionics equipment.

2. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will verify that all radios are functioning properly and keep a visual reference outside the aircraft. He will also verify that each radio functions on the guard frequencies and on at least two other frequencies. The P* will check FM homing and any secure radio equipment for proper operation. He will also check the transponder on a Mode 3/A squawk code and on the emergency squawk code. The P* will conduct the transponder checks with the ATC facility from a distance of 10 to 30 nautical miles. He will tune and identify an NDB station and ensure that the ADF needle points to the station. The P* will then fly to the station and verify station passage. If time permits, he will execute an NDB approach.

3. The P* will tune the VOR (if installed) and verify that the needle points to the station. He will adjust the OBS, track to the station, and verify station passage. If time permits, he will execute a VOR or an ILS approach.

REFERENCES:

TM 55-1520-228-10
TM 55-1520-228-MTF

TASK 2742

TASK: Perform after-landing and engine-shutdown checks.

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS:

1. Without error, perform an after-landing and engine-shutdown check according to TM 55-1520-228-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-228-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce that the checks are completed.

REFERENCE:

TM 55-1520-228-MTF

TASK 2744

TASK: Perform special/detailed procedures.

CONDITIONS: In an OH-58A/C helicopter with additional/special equipment installed or orally.

STANDARDS:

1. Without error, perform special/detailed procedures according to TM 55-1520-228-MTF and applicable references.

2. Correctly check and perform all items in sequence according to the applicable references.

3. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The MP will check any additional/special equipment installed in the aircraft and demonstrate a knowledge of the system and the published operational checks. He will also demonstrate a knowledge of the published charts, graphs, and work sheets.

2. The P will announce all required checks in sequence according to TM 55-1520-228-MTF or applicable references. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

3. The P* will perform all checks as directed by the P and announce that the checks are completed.

NOTE: A complete check of all special/detailed procedures is not required for an evaluation. Selected checks may be performed orally.

REFERENCES:

AR 95-1
AR 95-3
TM 55-1520-228-23 series
TM 55-1520-228-CL
TM 55-1520-228-MTF
TM 55-2840-231-23
TM 55-2840-241-23

TASK 2770

TASK: Perform prior-to-maintenance-test-flight checks.

CONDITIONS: In an OH-6 helicopter and given TMs 55-1520-214-10 and 55-1520-214-CL.

STANDARDS:

1. Without error, perform the preflight inspection according to TM 55-1520-214-10 or TM 55-1520-214-CL.

2. Correctly check and perform all items in sequence.

3. Correctly determine aircraft suitability for flight.

4. Determine the maneuvers, checks, and tasks required during the test flight.

5. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The MP will ensure that the preflight is conducted according to TM 55-1520-214-10 or TM 55-1520-214-CL. He will review all forms and records and ensure that the appropriate information is entered on DA Forms 2408-12 and 2408-13.

2. The crew member(s), if available, will assist the test pilot in completing the preflight.

3. The MP will determine the maneuvers or checks necessary for the maintenance test flight. The crew will use additional publications and references as necessary. The MP will brief the crew member(s) and any supporting ground crew members concerning operation on or around the helicopter and ensure that the ground communication capability is adequate. He will stress any applicable safety considerations or procedures during the briefing.

4. The MP will ensure that a walk-around inspection is completed following the preflight.

REFERENCES:

AR 95-1
AR 95-3
TM 55-1520-214-10
TM 55-1520-214-23 series
TM 55-1520-214-CL
TM 55-1520-214-MTF
TM 55-2840-231-23

TASK 2771

TASK: Perform before-starting engine checks.

CONDITIONS: In an OH-6 helicopter and given TM 55-1520-214-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-214-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P, if available, will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce when the checks are completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2772

TASK: Perform starting engine checks.

CONDITIONS: In an OH-6 helicopter and given TM 55-1520-214-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-214-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunctions or discrepancies and apply corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P, if available, will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P*, the P, and the ground crew member(s), if available, will clear the area around the aircraft before starting the engine.

3. Before starting the engine, the crew will ensure that all of the appropriate internal and external lights are operational and properly set.

4. The P* will announce the initiation of the engine start and the appropriate items to be recorded during the start sequence; for example, peak TOT and the duration of start time.

REFERENCES:

TM 55-1520-214-10
TM 55-1520-214-MTF

TASK 2773

TASK: Perform engine run-up checks.

CONDITIONS: In an OH-6 helicopter and given TM 55-1520-214-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-214-MTF.

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce when the checks are completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2774

TASK: Perform baseline and normal engine health indicator test.

CONDITIONS: In an OH-6 helicopter or orally and given TM 55-1520-214-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-214-MTF.

2. Correctly check and perform all items in sequence.

3. Use the appropriate HIT log or work sheet.

4. Correctly record all required readings on the HIT log.

5. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Ensure that all computations on the work sheet are correct if a new baseline HIT is established.

7. Correctly perform crew coordination actions.

DESCRIPTION: The P will use the HIT log to perform the HIT check. The MP will use the computation sheet to perform the baseline HIT and follow the procedures printed on the HIT log or the work sheet.

NOTE: Under no circumstances will a new baseline HIT be established until the aircraft has passed an engine performance check.

REFERENCES:

TM 55-1520-214-MTF
TM 55-2840-231-23

TASK: Perform before-takeoff check.

CONDITIONS: In an OH-6 helicopter and given TM 55-1520-214-MTF.

STANDARDS:

1. Without error, perform procedures and checks according to TM 55-1520-214-MTF.

2. Correct use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence.

4. Correctly determine all malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all the required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P announce when the checks are completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2776

TASK: Perform takeoff to a hover.

CONDITIONS: In an OH-6 helicopter with the before-takeoff check completed.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Note cyclic, collective, and pedal control responses.

3. Maintain a 3-foot hover, ±1 foot.

4. Note the center of gravity.

5. Smoothly increase power 1.5 to 2 percent N2.

6. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

7. Correctly perform crew coordination actions.

DESCRIPTION:

1. P* will ensure that all control and instrument indications are normal, announce his intention to bring the aircraft to a stationary hover, and keep a visual reference outside the aircraft. He will then increase the collective with smooth, positive pressure and apply antitorque pedals as needed to maintain heading while adjusting the cyclic to achieve a vertical ascent. He will then announce that the aircraft is stabilized. The P* will note that the apparent center of gravity is normal and that no excessive control displacement is required during the ascent. He will adjust the collective to maintain the desired altitude and check to ensure that N2 has increased from 1.5 percent to 2 percent. While hovering the aircraft into the wind, the P* will note that the cyclic and pedal positions are normal for conditions.

2. The P will check the parking area for indications of leaks, verify that all system instruments are in the normal ranges for conditions, and record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

REFERENCE:

TM 55-1520-214-MTF

TASK 2777

TASK: Perform hovering turns.

CONDITIONS: In an OH-6 helicopter with the hover power check completed.

STANDARDS:

1. Ensure that the aircraft clear of all obstacles.

2. Maintain a 3-foot hover, ±1 foot.

3. Perform left and right turns of 90 degrees to each side of the wind direction.

4. Position the aircraft into the wind.

5. Perform turns not to exceed 90 degrees in 4 seconds.

6. Note tail rotor response and rigging.

7. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will apply pressure on the desired pedal to begin the turn and use pressure and counterpressure on the pedals to maintain a constant rate of turn. (The P* will note that excessive control inputs are not required during the maneuver and that the desired aircraft response is achieved.) He will make hovering turns to the left and right (90 degrees to either side of the wind direction) and announce that the check is completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2778

TASK: Perform sideward flight.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 3-foot hover, ±1 foot.

4. Maintain a flight path that is approximately perpendicular to the wind direction.

5. Do not exceed a ground speed of 5 knots.

6. Note cyclic response.

7. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will perform sideward flight in both directions with the aircraft positioned into the wind. (The P* will note that no excessive control inputs are required during the maneuver and that the desired aircraft response is achieved.) After the P* centers the cyclic, the aircraft should drift to a stop. He then announces that the check is completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2779

TASK: Perform forward hovering flight.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 5-foot hover, ±1 foot.

4. Note the response of the cyclic and the tail rotor pedals.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 5-foot hover into the wind and keep a visual reference outside the aircraft. He will apply enough forward cyclic to accelerate to, but not through, ETL. (The P* will note that excessive control inputs are not required during the maneuver and that the desired aircraft response is achieved.) After reaching ETL, he will bring the aircraft to a stabilized 3-foot hover and announce that the check is completed.

NOTE: A 5-foot hover altitude will ensure that the tail rotor does not strike the ground during the maneuver.

REFERENCE:

TM 55-1520-214-MTF

TASK 2780

TASK: Perform engine response check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Ensure that aircraft altitude does not exceed 50 feet AGL.

4. Note engine response.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. He will then make a positive increase in the collective pitch. The engine should respond smoothly and rapidly. (The P* will ensure that N1 increases in less than 1 second and reduce the collective before too much altitude (50 feet) is gained.) He will then announce that the check is completed.

CAUTION

Do not exceed engine limitations.

NOTE: The engine response check tests the response of the engine when a moderate power demand is placed on it.

REFERENCE:

TM 55-1520-214-MTF

TASK 2781

TASK: Perform low RPM hover.

CONDITIONS: In an OH-6 Helicopter during the day and under VMC.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain a 3-foot hover, ±1 foot.

4. Note aircraft controllability.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the maneuver from a stabilized 3-foot hover into the wind and keep a visual reference outside the aircraft. Using the governor RPM switch, he will slowly reduce N2 RPM to the full-decrease position while he maintains a stabilized hover. The P* will check aircraft controllability at low RPM and antitorque controllability by performing 45-degree turns. He will increase N2 RPM to 103 percent and announce that the check is completed.

WARNING

To minimize the risk of LTE, the MP will consider wind velocity, direction, load, and density altitude.

REFERENCES:

TM 55-1520-214-10
TM 55-1520-214-MTF

TASK 2783

TASK: Perform takeoff and climb check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Without error, perform a takeoff and climb check according to TM 55-1520-214-MTF.

3. Correctly check and perform all items in sequence.

4. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will begin the check from a stabilized 3-foot hover in the direction of takeoff and keep a visual reference outside the aircraft. During the takeoff and climb, he will ensure that control positions and instrument indications are normal for the conditions. The P* will check for any abnormal conditions or unusual vibrations, initiate a fuel consumption check, and announce that the check completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2784

TASK: Perform control rigging check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain an airspeed of 100 KIAS, ±5 KIAS.

4. Maintain torque at 40 psi.

5. Maintain the aircraft in trim.

6. Note cyclic and pedal positions.

7. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

8. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind from an altitude that will allow safe recovery and keep a visual reference outside the aircraft. While maintaining the appropriate airspeed, torque, and trim, he will ensure that the cyclic is almost centered, the trim actuators maintain cyclic position, and the right pedal is approximately one and one-half inches forward of the left pedal. The P* will then announce that the check is completed.

REFERENCES:

TM 55-1520-214-23
TM 55-1520-214-MTF

TASK 2785

TASK: Perform autorotation RPM check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Ensure that the aircraft is within gliding distance suitable landing area.

4. Complete the power recovery before reaching 500 feet AGL.

5. Maintain an airspeed of 60 KIAS, ±5 KIAS.

6. Note N1, trim, vibrations, and torque and correctly record rotor RPM.

7. Perform the correct power recovery procedure.

8. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

9. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will establish radio communications for maneuver coverage and verify that the landing area is suitable. He will position the aircraft into the wind at an altitude that will allow a safe recovery and keep a visual reference outside the aircraft. While maintaining 60 KIAS, the P* will smoothly lower the collective to the full-down position and note that the main rotor does not overspeed. After ensuring that he can reach a suitable landing area, the P* will retard the throttle to the engine-idle position and note that the rotor and N2 needles split and that N1 is stabilized at engine idle. The P* will check to ensure that the torque is less than 10 psi and that no warning or caution lights are illuminated. He will ensure that no unusual vibrations, conditions, or control positions exist and the aircraft is in trim. He will ensure that the rotor RPM is within limits and note the exact rotor RPM indication. He will then perform a power recovery by slowly advancing the throttle to the full-open position and ensuring that the N2 and rotor needles are joined and stabilized before he increases the collective. The P* will establish a climb before he reaches 500 feet AGL and announce that check is completed.

REFERENCES:

TM 55-1520-214-23
TM 55-1520-214-MTF

TASK 2786

TASK: Perform engine performance check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Position the aircraft into the wind.

3. Maintain cruise flight at 500 feet AGL or above.

4. Set the altimeter to 29.92.

5. Establish a climb, and maintain 70 KIAS, ±5 KIAS.

6. Do not exceed aircraft limitations.

7. Correctly record the appropriate readings at test altitude.

8. Reset the altimeter to the current reading.

9. Correctly analyze EPC data.

10. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

11. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind during cruise flight at 500 feet AGL or above. He will preplan a "maximum torque available" at the selected test altitude. The P* will then set the altimeter to 29.92 and, based on existing weather conditions, ensure that all bleed air is off. He will initiate a climb at 70 KIAS to 500 feet below the selected test altitude while he monitors engine and flight instruments. At approximately 200 to 300 feet (prior to reaching the test altitude), the P* will slowly increase the collective so that he achieves the maximum limit of TOT, N1, or torque at 103 percent N2 by the time he reaches the test altitude. The P will record the torque, N1, TOT, PA, and OAT. Before continuing the test flight, the P* will verify the OAT at the selected test altitude, reset the altimeter to the current altimeter setting, and determine if the required torque was attained. The P* will also ensure that any N2 droop recovers to 103 percent within 5 seconds. He will then announce that the check is completed.

NOTE: This maneuver will be accomplished so that when maximum power is achieved, the aircraft will be in a position to reach a safe landing area.

REFERENCE:

TM 55-1520-214-MTF

TASK 2788

TASK: Perform collective bungee check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Determine Vne at flight altitude.

3. Identify halfway index on collective friction.

4. Correctly check and perform all items in sequence.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform the flight evaluation of collective forces with the takeoff weight at 2,200 pounds and N2 at 103 percent with zero collective control friction. He will maintain 60 KIAS and determine if the collective forces are near neutral in level flight. The P* will continue flying at 60 KIAS, increase torque to 75 psi, and determine if the collective forces are near neutral. (A slight downward pressure is acceptable.) The P* will then increase the airspeed to VNE. (The collective forces should be cancelled using friction at the halfway index.) The P* will then announce that the check is completed.

REFERENCES:

TM 55-1520-214-23
TM 55-1520-214-MTF

TASK 2789

TASK: Perform flight instruments check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Correctly check flight instruments.

3. Correctly determine malfunctions or discrepancies and apply corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions that are marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will position the aircraft into the wind at an altitude that will allow a safe recovery and keep a visual reference outside the aircraft. He will verify that the flight instruments correlate with other supporting instrument indications. The P* will perform functional checks by using timed turns, climbs, descents, and known power settings. He will then announce that the check is completed.

REFERENCES:

TM 55-1520-214-10
TM 55-1520-214-MTF

TASK 2790

TASK: Perform communication and navigation equipment checks.

CONDITIONS: In an OH-6 helicopter or orally.

STANDARDS:

1. Check all avionics equipment.

2. Correctly determine malfunctions or discrepancies and apply corrective actions/troubleshooting procedures.

3. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will verify that all radios are functioning properly and keep a visual reference outside the aircraft. He will also verify that each radio functions on the guard frequency and at least two other frequencies. The P* will check FM homing and any installed secure radio equipment for proper operation. He will check the transponder on a Mode 3/A squawk code and on the emergency squawk code. The P* will conduct the transponder checks with the ATC facility from a distance of 10 to 30 nautical miles. He will tune and identify an NDB station, ensure that the ADF needle points to the station, fly to the station, and verify station passage. If time permits, he will execute an NDB approach.

REFERENCES:

TM 55-1520-214-10
TM 55-1520-214-MTF

TASK 2791

TASK: Perform before-landing checks.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Ensure that the aircraft is clear of all obstacles.

2. Without error, perform a before-landing check according to TM 55-1520-214-MTF.

3. Correctly use the oral call-out and confirmation method.

4. Correctly check and perform all items in sequence according to TM 55-1520-214-MTF.

5. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

6. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce that the checks are completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2792

TASK: Perform after-landing checks.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Without error, perform an after-landing check according to TM 55-1520-214-MTF

2. Correctly use the oral call-out and confirmation method.

3. Correctly check and perform all items in sequence according to TM 55-1520-214-MTF.

4. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

5. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce that the checks are completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2793

TASK: Perform engine-out/reignition check.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Without error, perform an engine-out/reignition check according to TM 55-1520-214-MTF.

2. Correctly check and perform all items in sequence according to TM 55-1520-214-MTF.

3. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will initiate the check with the collective full down and the throttle at engine idle. He will rotate the throttle to the full-open position. He will then observe that no reignition occurs if the N2 reaches 95 percent or more in 3.5 seconds or less after the throttle is opened. The P* will pull the fuel shutoff valve to the full-up position and note an almost immediate engine shutdown. He will also note that reignition occurs as the N2 decreases to 95 percent. The P* will place the throttle in the OFF position and the fuel valve in the OPEN position. He will note that the transmission warning light, engine-out audio, and engine-out light are on. The P* will restart the engine and allow it to stabilize at idle. He will close the throttle and note that the reiqnition liqht illuminates as the N1 passes through 55 percent. The P* will then announce that the check is completed.

CAUTION

Heading control must be maintained with proper pedal application. Rapid acceleration may cause excessive torsional forces.

REFERENCES:

TM 55-1520-214-23
TM 55-1520-214-MTF

TASK 2794

TASK: Perform engine-shutdown checks.

CONDITIONS: In an OH-6 helicopter.

STANDARDS:

1. Without error, perform an engine shutdown according to TM 55-1520-214-MTF.

2. Correctly check and perform all items in sequence according to TM 55-1520-214-MTF.

3. Correctly determine malfunctions or discrepancies and apply the corrective actions\troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The P will announce all required checks in sequence according to TM 55-1520-214-MTF. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

2. The P* will perform all checks as directed by the P and announce that the checks are completed.

REFERENCE:

TM 55-1520-214-MTF

TASK 2795

TASK: Perform special/detailed procedures.

CONDITIONS: In an OH-6 helicopter with additional/special equipment installed or orally.

STANDARDS:

1. Without error, perform special/detailed procedures according to TM 55-1520-214-MTF and applicable references.

2. Correctly check and perform all items in sequence according to TM 55-1520-214-MTF.

3. Correctly determine malfunctions or discrepancies and apply the corrective actions/troubleshooting procedures.

4. Correctly perform crew coordination actions.

DESCRIPTION:

1. The MP will check any additional/special equipment installed in the aircraft and demonstrate a knowledge of the system and published operational checks. He will also demonstrate a knowledge of the published charts, graphs, and work sheets.

2. The P will announce all required checks in sequence according to TM 55-1520-214-MTF or applicable references. He will record on the MTF check sheet any normal conditions marked with an asterisk or any abnormal conditions noted by the P*.

3. The P* will perform all checks as directed by the P and announce that the checks are completed.

NOTE: A complete check of all special/detailed procedures is not required for an evaluation. Selected checks may be performed orally.

REFERENCES:

AR 95-1
AR 95-3
TM 1-1500-328-23
TM 55-1520-214-23
TM 55-1520-214-CL
TM 55-1520-214-MTF
TM 55-2840-231-23

CHAPTER 8

EVALUATIONS

This chapter describes evaluation principles and grading considerations. It also contains guidelines for conducting the hands-on performance test component of the APART; the battle-rostered crew proficiency flight; and the proficiency, NVG standardization, postaccident, medical, no-notice, and commander's evaluations. The flight evaluation is a primary means of assessing flight standardization and crew member proficiency. It is, therefore, a key part of Army aviation standardization.

Section I. Evaluation Principles and Grading Considerations

8-1. EVALUATION PRINCIPLES

a. The evaluation must include the examinee's ability to perform essential hands-on tasks to the standards prescribed for each task in Chapter 6 or Chapter 7. It also must include the examinee's ability to manage aircraft resources to successful mission completion.

b. The guidelines for evaluating crew coordination are not based on objective criteria; for example, whether airspeed and altitude are maintained within limits. 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 judgement, 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 cockpit 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 cockpit. 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. The evaluator should expect the P*/AO/AFSO to forewarn him of planned maneuvers. As the P, the evaluator should announce his intentions to the P*/AO/AFSO. These announcements permit the proper sequencing of required follow-on actions.

g. In all phases of individual instruction and evaluation, the evaluator is expected to perform as a crew member in good faith. At some point during the evaluation, circumstances may prevent the evaluator from performing as a crew member. In such cases, a realistic, meaningful, and planned method should be developed to 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 renders 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 provide constructive comments. These evaluators are the SPs, IPs, IEs, and MEs who assist the commander in administering the ATP.

(2) The **method** used to conduct the evaluation must be based on uniform, 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 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. General comments do not always provide the direction and guidance essential for improvement. To serve its purpose, the evaluation must pinpoint both strengths and weaknesses.

8-2. GRADING CONSIDERATIONS

a. Oral Examination. The examinee must demonstrate a working knowledge and 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 during the evaluation, the evaluator must make 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

The flight 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, he must ensure that the examinee understands 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 1--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.

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 UTs, the evaluation will include special emphasis on the examinee's performance in those areas in which UT duties are performed. The evaluation should ensure that the examinee can safely and effectively perform UT duties.

b. **Phase 2--Oral Examination.** The examinee must have a working knowledge and understanding of all applicable topics in the respective subject areas below. He must respond correctly to questions from topics selected by the evaluator. As a minimum, the evaluator will select two topics from each appropriate subject area. An evaluator will also demonstrate an ability to instruct and evaluate any topic. Aerodynamics, tactical and mission tasks, and night tasks are not required for instrument evaluations. Tactical and mission operations, weapon systems operations and deployment, and night mission operations and deployment do not apply to MP evaluations. Also, for MP evaluations, questions on aeromedical factors and aerodynamics will be at the discretion of the evaluator. Topics marked with one asterisk are for MPs and MEs only. AOs and AFSOs are responsible only for those topics marked with two asterisks.

(1) **Regulations and publications (ARs 40-8, 95-1, 95-2, and 95-3; DA Pamphlet 738-751; DOD FLIP; TC 1-210; and local SOPs and regulations).** Topics in this subject area are--

(a) ATP requirements.**

(b) SOP requirements.**

---

*These topics pertain to MPs/MEs Only.
**AO/AFSOs are responsible only for these topics.

(c) DOD flight information publications and maps.

(d) VFR minimums and procedures.

(e) IFR minimums and procedures.

(f) Aviation life support equipment.**

(g) Weight and balance requirements.

(h) Flight plan preparation and filing.

(i) Flight restrictions due to exogenous factors.**

(j) Inadvertent IMC\VHIRP.

(k) Test flight weather requirements.*

(l) Local airspace usage.

(m) Publications required in the aircraft.

(n) Maintenance operational check requirements.*

(o) Maintenance test flight requirements.*

(p) Maintenance test flight forms and records.*

(2) **Operating limitations and restrictions (Aircraft Operator's Manual).** Topics in this subject area are--

(a) Wind limitations.

(b) Rotor limitations.

(c) Power limitations.

(d) Engine limitations.

(e) Weather limitations.

(f) Pressure limitations.

(g) Airspeed limitations.

(h) Temperature limitations.

(i) Flight envelope limitations.

(j) Aircraft systems limitations.

(k) Performance chart interpretation.

(3) **Aircraft emergency procedures and malfunctions (Aircraft Operator's Manual).** Topics in this subject area are--

(a) Definition of emergency terms.

(b) Emergency exits and equipment.**

(c) Engine malfunctions and restart procedures.

(d) Rotor, transmission, and drive systems.

(e) Tail rotor malfunctions.

(f) Chip detectors.

(g) Fires and hot starts.

(h) Smoke and fume elimination.

(i) Hydraulic system malfunction (OH-58 only).

(j) Fuel system malfunction.

(k) Electrical system malfunctions.

(l) Landing and ditching procedures.

(m) Flight controls malfunctions.

(n) Mission avionics malfunctions.

(4) **Aeromedical factors (AR 40-8, FM 1-301, and TC 1-204).** Topics in this subject area include the effects of--

(a) Hypoxia.**

(b) Carbon monoxide.**

(c) Self-imposed stresses.**

(d) Middle ear discomfort.**

(e) Spatial disorientation.**

(5) **Aerodynamics (FM 1-203 and Aircraft Operator's Manual).** Topics in this subject area are--

(a) Relative wind.

(b) Total aerodynamic force.

(c) Airflow during hover.

(d) Airflow in forward flight.

(e) Translating tendency.

(f) Transverse flow.

(g) Dissymmetry of lift.

(h) Dynamic rollover.

(i) Settling with power.

(j) Autorotation in forward flight (IP/SP only).

(6) **Tactical and mission tasks (FMs 1-112, 1-116, 1-400, 1-402, and 90-4; TCs 1-201, 1-204, and 1-210; Aircraft Operator's Manual; and unit SOP).** Topics in this subject area are--

(a) Tactical reports.**

(b) Tactical communication procedures and electronic counter-countermeasures. **

(c) Actions on contact.**

(d) Hazards to terrain flight safety.**

(e) Downed aircraft procedures.**

(f) Terrain flight mission planning.**

(g) Aircraft survivability equipment.**

(h) Interpretation of navigational charts (maps).**

(i) Identification of major US or allied equipment and major threat equipment expected to be in the area of operation.**

(7) **Night mission operation and deployment (TC 1-204 and Aircraft Operator's Manual).** Topics in this subject area are--

(a) Unaided night flight.**

(b) Night vision limitations and techniques.**

(c) Visual illusion.**

(d) Use of lights (internal and external).**

(e) Types of vision.**

(f) Distance estimation and depth perception.**

(g) Dark adaptation, night vision protection, and central night blind spot.**

(h) Aircrew night and NVG requirements.**

(i) NVG operational considerations.**

(8) **Maintenance test flight system operations, malfunctions, and troubleshooting (TMs 55-1520-214-23, 55-1520-214-MTF, 55-1520-228-23, and 55-1520-228-MTF).** Topics in this subject area are--

(a) Engine start.*

(b) Instrument indications.*

(c) Electrical system.*

(d) Warning, caution, and advisory indications.*

(e) Power plant.*

(f) Engine performance check.*

(g) Mission equipment.*

(h) Power train.*

(i) Hydraulic system (OH-58 only).*

(j) Flight controls.*

(k) Rotor smoothing.*

(l) Fuel system.*

(m) Communication and navigation equipment.*

c. **Phase 3--Flight Evaluation.** This phase consists of a briefing; a preflight inspection; engine-start and run-up procedures; flight tasks; and engine shutdown and after-landing tasks.

(1) **Briefing.** The evaluator will explain the flight evaluation procedure and tell the examinee which tasks he will perform. 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. In addition, the evaluator will conduct or have the examinee conduct a crew briefing that includes, as a minimum, the items listed below.

(a) Mission.

(b) Weather.

(c) Flight route.

(d) Performance data.

(e) Postcrash rendezvous point.

(f) Transfer of flight controls.

(g) Crew duties, to include emergency duties.

(h) Procedures for conducting simulated emergencies.

NOTE: Refer to Task 1000, Conduct Crew Mission Briefing, and local directives for additional crew briefing requirements.

(2) **Preflight inspection and engine-start and run-up procedures.** The evaluator will evaluate the examinee's use of the Operator's and Crewmember's Checklist, TM 55-1520-214-MTF, or TM 55-1520-228-MTF. He also will have the examinee properly identify at least two aircraft components and discuss their functions.

(3) **Flight tasks.** As a minimum, the evaluator will evaluate those tasks identified in Chapter 5 as mandatory for the designated crew station and those mission or additional tasks selected by the commander for evaluation. The evaluator may randomly select for evaluation any tasks listed on the mission or additional task list established by the commander. An evaluator or UT must demonstrate an ability to evaluate and instruct appropriate flight tasks. When used as part of the proficiency flight evaluation, the evaluation may include an orientation of the local area, checkpoints, weather, and other pertinent information. All MTF mission tasks are mandatory for an MTF standardization evaluation.

(4) **Engine shutdown and after-landing tasks.** The evaluator will evaluate the examinee's use of the Operator's and Crewmember's Checklist, TM 55-1520-214-MTF, or TM 55-1520-228-MTF.

d. **Phase 4--Debriefing.** During this phase, the evaluator will--

(1) Use DA Forms 4507-R, 4507-2-R, 5865-R, 5866-R, 5051-1-R (if used), 5051-7-R (if used), and 7121-R to critique the examinee's performance.

(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) per instructions in Chapter 9. (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.)

8-4. BATTLE-ROSTERED CREW EVALUATION

a. Battle-rostered crew evaluation is a continuous process during crew training. The evaluator must evaluate the crew's ability to perform all required tasks in the day, night unaided, and NVG modes.

b. Instructors or 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 the backseat of the aircraft.

(2) Observation from another aircraft during multi-aircraft operations.

(3) Debriefing and interrogation of the crew.

c. Once the crew has demonstrated proficiency in all crew tasks, both during the day and under NVG, and the unit 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.

8-5. PROFICIENCY FLIGHT EVALUATION

a. 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--

(1) The individual's readiness level upon his assignment to the unit.

(2) The individual's proficiency when his aircraft currency has lapsed per AR 95-3. Currency evaluations are administered to reestablish pilot proficiency.

(3) The individual's proficiency when questioned by the commander.

b. After the evaluation, the examiner will debrief the individual and complete the appropriate grade slips and comment slips (if required) per instructions in Chapter 9.

8-6. ANNUAL NVG STANDARDIZATION FLIGHT EVALUATION

This evaluation is conducted per TC 1-210, this manual, and the Commander's Task List. After the evaluation, the IP/SP will debrief the examinee and complete DA Forms 4507-R, 4507-2-R, 5865-R, and 5866-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 that the crew member was performing at the time of the mishap. Special emphasis should be placed on evaluating the task which was being performed at the time of the mishap under similar conditions, if possible. Safe operating practices must never be sacrificed in an attempt to re-create the conditions that existed at the time of the mishap. After the evaluation, the IP/SP will debrief the examinee and complete DA Forms 4507-R, 5865-R or 5866-R, and 4507-2-R (if used) per instructions in Chapter 9.

8-8. MEDICAL FLIGHT EVALUATION

This evaluation is conducted per AR 95-1. The IP, SP, or ME, on the recommendation of the flight surgeon, will require the examinee to perform a series of tasks most affected by the examinee's disability. The evaluation should measure the examinee's potential to perform aviation missions 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, the appropriate grade slips, and comment slips (if required) to Commander, US Army Aviation Center, ATTN: HSXY-AER, Fort Rucker, AL 36362-5333.

8-9. NO-NOTICE EVALUATION

The commander directs the no-notice evaluation and administers it using the guidelines in paragraph 8-3. The evaluation is used to determine the crew member's and crew's proficiency and to provide the commander an indication of the status of his training program. It may be an oral, a written, or a flight evaluation (or any combination or portion of the three) as directed by the commander. After the evaluation, the evaluator will debrief the crew member or crew and complete the appropriate DA forms.

8-10. COMMANDER'S EVALUATION

DA Form 4507-2-R is used to document the records review. If a proficiency flight evaluation is conducted as part of the commander's evaluation, refer to paragraph 8-5.

CHAPTER 9

AIRCREW GRADING SYSTEM

The aircrew grading system provides the commander a complete and continuous performance record for 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. Blank copies of the forms necessary for evaluations and training flights are provided at the back of this training circular. They may be reproduced locally on 5 1/2 by 8-inch paper. The importance of these records to the commander as quality control and standardization tools cannot be overstated. They must be filled out carefully, completely, and legibly (printed in dark blue or black ink).

9-1. DA FORM 4507-R (STANDARD EVALUATION/TRAINING GRADE SLIP)

This form is used to record information 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 shown in Figures 9-1 and 9-2 (pages 9-3 and 9-4). The instructions for completing the form are given below.

a. <u>Examinee/Trainee and Evaluator/Instructor.</u> Required entries are self-explanatory. Show last names first.

b. <u>Flight Time Data.</u>

(1) <u>Total hours.</u> Enter total hours (fixed-wing or rotary-wing) if required by local directives.

(2) <u>Purpose.</u> Circle evaluation or training or both for a continual evaluation. If evaluation, write in the specific purpose of the evaluation flight; for example, APART or proficiency flight evaluation. If training, write in the type of training conducted such as refresher, mission, continuation, and so forth.

(3) <u>Time today and cumulative time.</u> 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 (L for left, R for right, or B for both).

(5) **Type aircraft, crew duty, type of training, and time flown.** Enter the type of aircraft, and place an X in the appropriate blocks. (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; for example, day, night, hood, WX, simulator, NVG, or NVS.

c. **Evaluator/Instructor Recommendations.** Place an X in the appropriate blocks and circle applicable items; for example, issue orders or validate status. If crew duty position is other than that shown, specify in the space provided. Use the comment slip on the reverse side to explain unsatisfactory performance, referencing the appropriate maneuver or procedure number from DA Form 5865-R, 5866-R, 5051-1-R, or 5051-7-R. Recommended additional training also may be listed on the reverse side, 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 reverse side.

(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 examiner 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 TC 1-209,1-211, 1-212, 1-213, 1-214, 1-215, and 1-216; the proponent agency is TRADOC.

EXAMINEE/ TRAINEE	NAME: Lawrence, Walt S.	RANK: CW4	SSN: 205-28-6458
	UNIT: HHT, 7/1 CAV Ft. Hood, TX 76544		BIRTH MONTH: Sep
EVALUATOR/ INSTRUCTOR	NAME: Donalds, Sam D.	RANK: CW4	SSN: 315-49-7190
	UNIT: HHT, 7/1 CAV, Ft. Hood, TX 76544		

FLIGHT TIME DATA

TOTAL HOURS (FW): | **TOTAL HOURS (RW):** 7000

PURPOSE: EVALUATION TRAINING (SPECIFY) Proficiency Flight Eval.

TIME TODAY: 2.3 | **CUMULATIVE TIME:** | **SEAT:** B

TYPE AIRCRAFT: OH-58CS		PI	PC	UT	IP	SP	IE	MP	ME	CE	AO
X CONTACT						X					
INSTRUMENT											
X NVG/NVS						X					
X TACTICS						X					
GUNNERY											
X OTHER ATAS						X					

DAY	NIGHT	HOOD	WX	SIMULATOR	NVG	NVS	
1.Ø	Ø.3				1.Ø		

EVALUATOR/INSTRUCTOR RECOMMENDATION

		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: Sam D. Donalds

I HAVE BEEN DEBRIEFED BY THE EVALUATOR OR INSTRUCTOR AND UNDERSTAND MY CURRENT STATUS.

EXAMINEE'S OR TRAINEE'S SIGNATURE: Walt S. Lawrence

OVERALL GRADE FOR THIS FLIGHT IS: S | U | NA **DATE:** 19 NOV 92

DA FORM 4507-R, MAR 92 **EDITION OF SEP 88 IS OBSOLETE**

Figure 9-1. Sample of a completed DA Form 4507-R (front)

COMMENT SLIP

This has been a satisfactory no-notice SP proficiency flight evaluation. Knowledge of commander's special mission tasks was above average. Although satisfactory, CW4 Lawrence should continue to review procedures for loading of ATAS weapon systems

Walt S. Lawrence

Sam D. Donalds
CW4, SP

PAGE 2, DA FORM 4507-R, MAR 92

Figure 9-2. Sample of a completed DA Form 4507-R (reverse)

9-2. DA FORM 4507-2-R (CONTINUATION COMMENT SLIP)

This form is used to continue comments from the reverse side 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 same procedure described in paragraph 9-1c. When all forms have been completed, staple them together.

9-3. DA FORM 5865-R (MANEWER/PROCEDURE GRADE SLIP FOR OH-58/ OH-6 AVIATORS) AND DA FORM 5866-R (MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AO/AFSO)

These forms list the base and mission tasks shown in Chapter 5. Blank spaces are provided to list additional tasks designated by the commander. A sample of a completed DA Form 5865-R is shown in Figures 9-5 and 9-6 (pages 9-8 and 9-9), and a sample of a completed DA Form 5866-R is shown in Figures 9-7 and 9-8 (pages 9-10 and 9-11). 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 grade (GR) block after the examinee or trainee completes each maneuver or procedure.

NOTE: Task numbers with a circle are mandatory for standardization flight evaluations. Task numbers with a square are mandatory for instrument flight evaluations. Task numbers with a diamond are mandatory for NVG standardization flight evaluations.

c. Enter D in the grade (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 grade blocks for maneuvers or procedures not 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 reverse side 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 1-218; the proponent agency is TRADOC.

Examinee's/Trainee's Name: Lawrence, Walt S. Date: 19Nov92

This form is used to continue
comments from the back of
DA Form 4507-R

Walt S. Lawrence Sam D. Donalds
CW4 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.

Walt S. Lawrence　　　Sam D. Donalds
CW4 SP

PAGE 2, DA FORM 4507-2-R, MAY 87

Figure 9-4. Sample of a completed DA Form 4507-2-R (reverse)

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AVIATORS

For use of this form, see TC 1-215; the proponent agency is TRADOC.

Examinee's/Trainee's Name Conn, Dan L. Date 4 May 92

Instructor or evaluator will sign in the first unused block.

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
1	CREW MISSION BRIEFING	S	23	HOVERING AUTOROTATION	S
2	VFR FLIGHT	S	24	SIMULATED ENGINE FAILURE, IGE HOVER	S
3	IFR FLIGHT	S	25	SIMULATED ENGINE FAILURE AT ALTITUDE	S
4	DD FORM 365-4	S	26	SIMULATED HYDRAULIC SYSTEM MALFUNCTION	S
5	DA FORM 4887-R	S	27	STANDARD AUTOROTATION	S
6	PREFLIGHT INSPECTION	S	28	AERIAL OBSERVATION	S
7	ENG START, RUN, HOVER, BEFORE-T/O, LDG, AND AFTER-LDG TASKS	S	29	EMERGENCY PROCEDURES	S
8	HOVER POWER CHECK	S	30	LOW-LEVEL AUTOROTATION	S
9	HOVERING FLIGHT	S	31	LOW-LEVEL AND LOW-AIRSPEED AUTOROTATION	S
10	NORMAL TAKEOFF	S	32	STANDARD AUTOROTATION WITH TURN	S
11	TRAFFIC PATTERN FLIGHT	/	33	INSTRUMENT TAKEOFF	/
12	FUEL MANAGEMENT PROCEDURES	S	34	RADIO NAVIGATION	
13	EMERGENCY PROCEDURES NVG FAILURE	/	35	HOLDING PROCEDURES	
14	PILOTAGE AND DEAD RECKONING	/	36	UNUSUAL ATTITUDE RECOVERY	/
15	VMC APPROACH	S	37	RADIO COMMUNICATION PROCEDURES	S
16	SLOPE OPERATIONS	S	38	PROCEDURES FOR TWO-WAY RADIO FAILURE	S
17	TERRAIN FLIGHT MISSION PLANNING	S	39	NONPRECISION APPROACH	S
18	TERRAIN FLIGHT TAKEOFF	S	40	PRECISION APPROACH	S
19	TERRAIN FLIGHT	S	41	INADVERTENT IMC PROCEDURES/ VHIRP	S
20	HOVER OGE CHECK	S	42	MASKING AND UNMASKING	S
21	NOE DECELERATION	S	43	TACTICAL COMMUNICATION PROCEDURES AND ECCM	/
22	TERRAIN FLIGHT APPROACH	S	44	TACTICAL REPORT	/

DA FORM 5865-R, APR 93 EDITION OF FEB 90 IS OBSOLETE

Figure 9-5. Sample of a completed DA Form 5865-R (front)

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AVIATORS

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
45	TECHNIQUES OF MOVEMENT		69	AREA RECONNAISSANCE	
46	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION		70	-10 EXAM	
47	AIRCRAFT SURVIVABILITY EQUIPMENT		71	ORAL EVALUATION	
48	ACTIONS ON CONTACT	S		Ronald S. Wall	
49	WIRE OBSTACLES	S			
50	MARK XII IFF SYSTEM	S			
51	SIMULATED ANTITORQUE MAL-FUNCTION (FIXED-PEDAL SETTING)	S			
52	PINNACLE OR RIDGELINE OPERATION	S			
53	FM RADIO HOMING				
54	EVASIVE MANEUVERS	S			
55	MULTIAIRCRAFT OPERATIONS	S			
56	RECONNOITER/RECOMMEND AN LZ/PZ				
57	ROUTE RECONNAISSANCE				
58	INDIRECT FIRE				
59	INSTALLATION AND LOADING OF WEAPONS				
60	PREFLIGHT INSPECTION OF WEAPON SYSTEM				
61	ATAS ENGAGEMENT				
62	WEAPON SYSTEMS (SAFE AND CLEAR)				
63	COMBAT POSITION				
64	TARGET HANDOVER TO ATTACK HELICOPTER				
65	HOLDING AREA RECON AND RECOMMENDATION				
66	SECURITY MISSION				
67	AERIAL RADIOLOGICAL SURVEY				
68	ZONE RECONNAISSANCE				

LEGEND :
- ○ STANDARDIZATION
- □ INSTRUMENT
- ◇ NVG

PAGE 2, DA FORM 5865-R, APR 93

Figure 9-6. Sample of a completed DA Form 5865-R (reverse)

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AO/AFSO

For use of this form, see TC 1-215; the proponent is TRADOC.

Examinee's/Trainee's Name Thomas, James T. **Date** 14Sep92

Instructor or evaluator will sign in the first unused block.

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
1	PREFLIGHT INSPECTION	S	25	AIRCRAFT SURVIVABILITY EQUIPMENT	S
2	ENG START, RUN, HOVER, BEFORE-T/O, LDG, AND AFTER-LDG TASKS	S	26	ACTIONS ON CONTACT	
3	STRAIGHT-AND-LEVEL FLIGHT	S	27	WIRE OBSTACLES	S
4	TURNS, CLIMBS, AND DESCENTS	S	28	MARK XII IFF SYSTEM	S
5	HOVERING FLIGHT	S	29	FM RADIO HOMING	
6	NORMAL TAKEOFF	S	30	EVASIVE MANEUVERS	
7	FUEL MANAGEMENT PROCEDURES	S	31	MULTIAIRCRAFT OPERATIONS	
8	EMERGENCY PROCEDURES NVG FAILURE		32	RECONNOITER/RECOMMEND AN LZ/PZ	
9	PILOTAGE AND DEAD RECKONING	S	33	ROUTE RECONNAISSANCE	
10	VMC APPROACH	S	34	INDIRECT FIRE	
11	TERRAIN FLIGHT MISSION PLANNING	S	35	INSTALLATION AND LOADING OF WEAPONS	
12	AERIAL OBSERVATION	S	36	PREFLIGHT INSPECTION OF WEAPON SYSTEMS	
13	EMERGENCY PROCEDURES	S	37	ATAS ENGAGEMENT	
14	RADIO NAVIGATION		38	WEAPON SYSTEMS (SAFE AND CLEAR)	
15	UNUSUAL ATTITUDE RECOVERY	S	39	COMBAT POSITION	
16	RADIO COMMUNICATION PROCEDURES	S	40	TARGET HANDOVER TO ATTACK HELICOPTER	
17	PROCEDURES FOR TWO-WAY RADIO FAILURE		41	HOLDING AREA RECON AND RECOMMENDATION	
18	NONPRECISION APPROACH		42	SECURITY MISSION	
19	PRECISION APPROACH		43	AERIAL RADIOLOGICAL SURVEY	
20	INADVERTENT IMC PROCEDURES/VHIRP	S	44	ZONE RECONNAISSANCE	
21	MASKING AND UNMASKING	S	45	AREA RECONNAISSANCE	
22	TACTICAL COMMUNICATION PROCEDURES AND ECCM	S	46	ORAL EVALUATION	S
23	TACTICAL REPORT	S	47	Jeffery Dotson	
24	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION	S	48		

DA FORM 5866-R, APR 93 EDITION OF FEB 90 IS OBSOLETE

Figure 9-7. Sample of a completed DA Form 5866-R (front)

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AO/AFSO					
NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
47			72		
48			73		
49			74		
50			75		
51			76		
52			77		
53			78		
54			79		
55			80		
56			81		
57			82		
58			83		
59			84		
60			85		
61			86		
62			87		
63			88		
64			89		
65			90		
66			91		
67			92		
68			93		
69			LEGEND: O STANDARDIZATION ◇ NVG		
70					
71					

PAGE 2, DA FORM 5866-R, APR 93

Figure 9-8. Sample of a completed DA Form 5866-R (reverse)

9-4. DA FORM 5051-1-R (MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP FOR OH-58 AVIATORS) AND DA FORM 5051-7-R (MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP FOR OH-6 AVIATORS)

The 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. Maneuvers grade slips are important tools in attaining standardization and quality control. They should be filled out correctly and legibly. The instructor or evaluator should carry this form during the evaluation or training flight. A sample of a completed DA Form 5051-1-R is shown in Figure 9-9 (page 9-13), and a sample of a completed DA Form 5051-7-R is shown in Figure 9-10 (page 9-14). 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 grade (GR) block after the examinee or trainee completes each maneuver or procedure.

c. Enter D in the grade (GR) block if the task is demonstrated only and the aviator is unable to practice it for some reason.

d. Place a diagonal in all grade blocks for maneuvers or procedures not evaluated. Another method is to place a diagonal in the first and last unused blocks and draw a vertical line connecting the two diagonals. This method may be used 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 reverse side 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 (OH-58A/C)

For use of this form, see TC 1-215; the proponent agency is TRADOC.

Examinee's / Trainee's Name Conn, Allen E. Date 14Sep92

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 AND NORMAL ENGINE HEALTH INDICATOR TEST	S
6	BEFORE-TAKEOFF CHECK	S
7	TAKEOFF TO A HOVER	S
8	HOVER POWER CHECK	S
9	HOVERING TURNS	S
10	SIDEWARD FLIGHT	S
11	FORWARD HOVERING FLIGHT	S
12	PYLON ISOLATION MOUNT CHECK	S
13	POWER CYLINDER CHECK	S
14	ENGINE RESPONSE CHECK	S
15	TAKEOFF AND CLIMB CHECK	S
16	CONTROL RIGGING CHECKS	S
17	AUTOROTATION RPM CHECK	S
18	ENGINE PERFORMANCE CHECK	S
19	HYDRAULICS-OFF CHECK	S
20	FLIGHT INSTRUMENTS CHECK	S
21	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	S
22	AFTER-LANDING AND ENGINE-SHUTDOWN CHECKS	S
23	SPECIAL/DETAILED PROCEDURES	S
24	ORAL EVALUATION	S
25	Theodore P. Maro	
26		
27		
28		
29		
30		
31		
32		
33		

NOTE: ITEMS 25 THROUGH 33 INTENTIONALLY LEFT BLANK FOR LATER USE.

DA FORM 5051-1-R, APR 93 EDITION OF JUL 90 IS OBSOLETE.

Figure 9-9. Sample of a completed DA Form 5051-1-R

MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (OH-6)
For use of this form, see TC 1-215; the proponent agency is TRADOC.

Examinee's/Trainee's Name Conn, Allen E. Date 14 Sep 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 AND NORMAL ENGINE HEALTH INDICATOR TEST	S
6	BEFORE-TAKEOFF CHECK	S
7	TAKEOFF TO A HOVER	S
8	HOVERING TURNS	S
9	SIDEWARD FLIGHT	S
10	FORWARD HOVERING FLIGHT	S
11	ENGINE RESPONSE CHECK	S
12	LOW RPM HOVER	S
13	TAKEOFF AND CLIMB CHECK	S
14	CONTROL RIGGING CHECK	S
15	AUTOROTATION RPM CHECK	S
16	ENGINE PERFORMANCE CHECK	S
17	COLLECTIVE BUNGEE CHECK	S
18	FLIGHT INSTRUMENTS CHECK	S
19	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	S
20	BEFORE-LANDING CHECKS	S
21	AFTER-LANDING CHECKS	S
22	ENGINE-OUT/REIGNITION CHECK	S
23	ENGINE SHUTDOWN CHECKS	S
24	SPECIAL/DETAILED PROCEDURES	S
25	ORAL EVALUATION	S
26	Theodore P. Maro	
27		
28		
29		
30		
31		
32		

NOTE: ITEMS 26 THROUGH 32 INTENTIONALLY LEFT BLANK FOR LATER USE.

DA FORM 5051-7-R, APR 93 EDITION OF JUL 90 IS OBSOLETE

Figure 9-10. Sample of a completed DA Form 5051-7-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. A sample of a completed DA Form 7121-R is shown in Figures 9-11 and 9-12 (pages 9-17 and 9-18). 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, PI, and AO\AFSO in the blocks provided. Enter the duty symbols, names, and ranks of nonrated crew members in the space provided. Then enter the unit of the crew. The required entries in the evaluator\instructor blocks 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 or both for a continual evaluation. If evaluation; write in the specific purpose of the evaluation flight; for example, no-notice or annual.

(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 space provided and circle the appropriate mode of flight. Enter the time flown in the block below each applicable condition; for example, 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 reverse side. Use the space on the reverse side to explain unsatisfactory performance, referencing the appropriate crew task. Recommended additional training also may be listed on the reverse side, 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 reverse side.

(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 reverse side. (By signing the form, crew members acknowledge that they have been debriefed. Their signatures do not mean that they concur or nonconcur with the results.)

(4) Circle S, U, or NA to indicate the overall grade for the flight based on the considerations below. Then enter the date.

(a) During training flights, an 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.

BATTLE-ROSTERED CREW EXAMINEES/TRAINEES

PC: Davis, Ben J. — NAME — RANK: CW3

PI:

NONRATED CREW MEMBERS

DUTY SYMBOL	NAME	RANK
AO	Hoxie, Allen L.	SPC

UNIT: F TRP, 7/1 CAV, Ft. Hood TX 76544

EVALUATOR/INSTRUCTOR

NAME: Wall, Ronald S. — RANK: CW4

UNIT: HHT, 7/1 CAV, Ft. Hood, TX. 76544

CREW DATA

TOTAL BATTLE-ROSTERED CREW HOURS: 10 — DATE DESIGNATED A BATTLE-ROSTERED CREW: 11 Nov 92

PURPOSE: EVALUATION/TRAINING No-Notice

TIME TODAY: 2.0 — CUMULATIVE TIME:

TYPE AIRCRAFT: OH-58C

CREW TASK 1 S D/N/NVD
CREW TASK 2 S D/N/NVD
CREW TASK 3 ____ D/N/NVD
CREW TASK 4 S D/N/NVD
CREW TASK 5 ____ D/N/NVD
CREW TASK 6 S D/N/NVD
CREW TASK 7 S D/N/NVD
CREW TASK 8 ____ D/N/NVD
CREW TASK 9 ____ D/N/NVD
CREW TASK 10 S D/N/NVD

DAY	NIGHT	WX	SIMULATOR	NVG	NVS
2.0					

EVALUATOR/INSTRUCTOR RECOMMENDATIONS

[X] (ISSUE) (VALIDATE) CREW QUALIFICATIONS
[ ] (SUSPEND) (REVOKE) CREW QUALIFICATIONS
[ ] REQUIRES ADDITIONAL (FLIGHT) (ACADEMIC) (SIMULATION DEVICE) TRAINING
[X] SEE BACK FOR COMMENTS

I HAVE DEBRIEFED THE EXAMINEES/TRAINEES AND INFORMED THEM OF THEIR STATUS.

EVALUATOR'S/INSTRUCTOR'S SIGNATURE: Ronald S. Wall

WE HAVE BEEN DEBRIEFED BY THE EVALUATOR/INSTRUCTOR AND UNDERSTAND OUR CURRENT STATUS.

PC'S SIGNATURE: Ben J. Davis

PI'S SIGNATURE:

NONRATED CREW MEMBERS' SIGNATURES: Allen L. Hoxie

OVERALL GRADE FOR THIS FLIGHT IS: S | U | NA — DATE: 15 Dec 92

DA FORM 7121-R, MAR 92

Figure 9-11. Sample of a completed DA Form 7121-R (front)

COMMENTS

This has been a satisfactory no-notice crew evaluation. This flight was conducted in a very professional manner from the crew brief thru the debrief of the mission.

Ben J. Davis
Allen L. Hoyle

Ronald S. Wall
CW3, I.P.

PAGE 2, DA FORM 7121-R, MAR 92

Figure 9-12. Sample of a completed DA Form 7121-R (reverse)

GLOSSARY

ACRONYMS AND ABBREVIATIONS

ADF automatic direction finder
APB Air Force base
AFSO aerial fire support observer
AGL above ground level
AHO above highest obstacle
AIM airman's information manual
AJ antijamming
AL Alabama
ALSE aviation life support equipment
alt altitude
AMC air mission commander
ammo ammunition
ANVIS aviator's night vision imaging system
AO aeroscout observer
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
ATAS air-to-air Stinger
ATC air traffic control
ATM aircrew training manual
ATP aircrew training program
ATTN attention
avail available
AVIM aviation intermediate maintenance

B both
BDA battle damage assessment
BMP Boyevaya Mashina Pekhoty [literal Russian: combat vehicle, infantry (amphibious armored)]

C Celsius
cal calibrated
CDI course diviation indicator
CE crew chief
CG center of gravity
CL checklist
cont continuous
CONUS continental United States
CPO copilot/observer
CRL crew readiness level

DA	Department of the Army
DD	Department of Defense
DH	decision height
DOD	Department of Defense
DOES	Directorate of Evaluation and Standardization
DSN	defense system network
ELT	emergency locator transmitter
emerg	emergency
eng	engine
EPC	engine performance check
equip	equipment
ETA	estimated time of arrival
ETE	estimated time en route
ETL	effective translational lift
eval	evaluation
EW	electronic warfare
F	Fahrenheit
FAA	Federal Aviation Administration
FAC	flight activity category
FAR	Federal Aviation Regulations
FARP	forward arming and refueling point
FAT	free air temperature
FDC	fire direction controller
FI	flight engineer instructor
FIH	flight information handbook
FLIP	flight information publication
flt	flight
FM	field manual or frequency modulated
FPM	feet per minute
FW	fixed wing
GA	Georgia
GCA	ground-controlled approach
GR	grade
GT	gun-target
GWT	gross weight
HIT	health indicator test
HQDA	headquarters, Department of the Army
hr	hour
HYD	hydraulic(s)
I	instrument
IAS	indicated airspeed
ICAO	International Civil Aviation Organization
ID	identification
IE	instrument flight examiner
IFF	identification, friend or foe (radar)

IFR	instrument flight rules
IGE	in-ground effect
ILS	instrument landing system
IMC	instrument meteorological conditions
incl	included
ind	indicated
IP	instructor pilot
IR	infrared
KIAS	knots indicated airspeed
km	kilometers
L	left
lb	pound(s)
ldg	landing
LOC	localizer
LTE	loss of tail rotor effectiveness
LZ	landing zone
MAP	missed approach point
max	maximum
MD	Maryland
MDA	minimum descent altitude
ME	maintenance test pilot evaluator
METL	mission essential task list
METT-T	mission, enemy, terrain, troops, and time
MIJI	meaconing, entrusion, jamming, and interference
MMSS	mast mounted sight subsystem
MOPP	mission-oriented protective posture
MP	maintenance test pilot
MTF	maintenance test flight
MWO	modification work order
N1	gas producer (speed)
NA	not applicable
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 system

OAT	outside air temperature
OBS	omnibearing selector
OGE	out-of-ground effect
OH	observation helicopter
OT	observer-target
P	pilot not on the controls
P*	pilot on the controls
PA	pressure altitude
PAR	precision approach radar
PAX	passengers
PC	pilot in command
PDU	pilot display unit
PI	pilot
POI	program of instruction
PPC	performance planning card
prog	programmed
psi	pounds per square inch
PZ	pickup zone
R	reproducible or right
RBHI	radio bearing heading indicator
R/C	rate of climb
ret	retract
RL	readiness level
RMP	reprogrammable microprocessor
rng	range
RPM	revolutions per minute
RW	rotary wing
S	satisfactory or standardization
SALUTE	size, activity, location, unit, time, and equipment
SAM	surface-to-air missile
SI	standardization flight instructor
SIF	selective identification feature
SOI	signal operations instruction
SOP	standing operating procedure
SP	standardization instructor pilot
SSN	social security number
STANAG	standardization agreement
TAMMS-A	The Army Maintenance Management System-Aviation
TAS	true airspeed
TB	technical bulletin
TC	training circular
TM	technical manual
T/O	takeoff
TOT	turbine outlet temperature
TRADOC	United States Army Training and Doctrine Command
TT	tension torsion

U unsatisfactory
UH utility helicopter
UHF ultra high frequency
US United States (of America)
USAAVNC United States Army Aviation Center
UT unit trainer

VA Virginia
VFR visual flight rules
VHF very high frequency
VHIRP vertical helicopter instrument recovery procedures
VMC visual meteorological conditions
Vne velocity never exceed
VOR VHF omnidirectional range

wt weight
wx weather

XPDR transponder

REFERENCES

SOURCES USED

These are the sources quoted or paraphrased in this publication.

Army Regulations

AR 95-10. The US Military Notice to Airmen (NOTAM) System. 17 November 1990.
AR 385-95. Army Aviation Accident Prevention. 20 May 1991.
AR 611-101. Personnel Selection and Classification, Commissioned Officer Classification System. 31 October 1990.

Department of the Army Pamphlet

DA Pamphlet 351-4. Army Formal Schools Catalog. 27 September 1991.

Department of Defense Airman's Information Manual

DOD AIM 86-100. Operation and Maintenance Overview General Triservice Mode 4 Handbook. May 1987.

This publication is available from Commanding Officer, ATTN: Code 2111, Naval Electronic Systems Engineering Activity, St. Inigoes, MD 20684-0010, or WR-ALC/MMAM-AIMS, ATTN: DOD AIMSPO, Robins AFB, GA 31098-5609.

Field Manuals

FM 1-101. Aviation Battlefield Survivability. 5 December 1990.
FM 1-103. Airspace Management and Army Air Traffic in a Combat Zone. 30 December 1981.
FM 1-104. Forward Arming and Refueling Points. 31 July 1985.
FM 1-300. Flight Operations and Airfield Management. 31 October 1986.
FM 1-400. Aviator's Handbook. 31 May 1983.
FM 3-3. NBC Contamination Avoidance. 30 September 1986.
FM 3-100. NBC Defense, Chemical Warfare, Smoke, and Flame Operations. 23 May 1991.
FM 5-36. Route Reconnaissance and Classification. 10 May 1985.

FM 6-30. Tactics, Techniques, and Procedures for Observed Fire. 16 July 1991.
FM 10-68. Aircraft Refueling. 29 May 1987.
FM 17-95. Cavalry Operations. 19 September 1991.
FM 21-26. Map Reading and Land Navigation. 30 September 1987.
FM 34-1. Intelligence and Electronic Warfare Operations. 2 July 1987.
FM 90-4. Air Assault Operations. 16 March 1987.

International Standardization Agreement

STANAG 3114 (Edition Six)/Air Standard 60/16. Aeromedical Training of Flight Personnel. 22 October 1986.

Technical Bulletin

TB MED 524. Occupational Environmental Health: Control of Hazards to Health From Laser Radiation. 20 June 1985.

Technical Manuals

TM 1-1500-328-23. Aeronautical Equipment Maintenance Management Policies and Procedures. 28 February 1991.
TM 9-1240-778-30. Aviation Intermediate Maintenance AVIM Mast Mounted Sight Subsystem (MMSS). 15 August 1986.
TM 9-1440-431-23. Aviation Unit and Aviation Intermediate Maintenance Manual for Air-to-Air Stinger Weapon System. 31 October 1989.
TM 9-4935-780-13. Operator, Aviation Unit and Aviation Intermediate Maintenance Manual for Test Support System, AN/TSM-173. 31 March 1992.
TM 11-5841-283-12. Aviation Unit Maintenance Manual for Radar Signal Detecting Set, AN/APR-39(V1). 9 August 1983.
TM 11-5855-263-10. Operator's Manual for Aviator's Night Vision Imaging System, AN/AVS-6(V)1 and AN/AVS-6(V)2. 15 September 1991.
TM 11-5895-1199-12. Operator's and Organizational Maintenance Manual for Mark-XII IFF System. 1 July 1984.
TM 55-1500-342-23. Army Aviation Maintenance Engineering Manual for Weight and Balance. 29 August 1986.
TM 55-2840-256-23. Aviation Unit and Aviation Intermediate Maintenance, Engine Aircraft Turboshaft. 2 June 1986.

DOCUMENTS NEEDED

These documents must be available to the intended users of this publication.

Army Regulations

*AR 40-80 Temporary Flying Restrictions Due to Exogenous Factors. 17 August 1976.
*AR 95-1. Aviation: Flight Regulations. 30 May 1990.
*AR 95-2. Aviation: Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigational Aids. 10 August 1990.
*AR 95-3. Aviation: General Provisions, Training, Standardization, and Resource Management. 27 September 1990.
*AR 600-105. Aviation Service of Rated Army Officers. 1 December 1983.
*AR 600-106. Flying Status for Nonrated Army Aviation Personnel. 2 March 1992.

Department of the Army Forms

DA Form 2028. Recommended Changes to Publications and Blank Forms. February 1974.
DA Form 2408-12. Army Aviator's Flight Record. January 1992.
DA Form 2408-13. Aircraft Status Information Record. October 1991.
DA Form 2696-R. Operational Hazard Report. March 1983.
DA Form 4507-R. Standard Evaluation/Training Grade Slip. March 1992.
DA Form 4507-2-R. Continuation Comment Slip. May 1987.
DA Form 4887-R. RW Performance Planning Card. May 1987.
DA Form 5051-1-R. Maintenance Test Flight Maneuvers Grade Slip (OH-58A/C). April 1993.
DA Form 5051-7-R. Maintenance Test Flight Maneuvers Grade Slip (OH-6). April 1993.
DA Form 5484-R. Aircrew Mission Briefing. November 1985.
DA Form 5865-R. Maneuver/Procedure Grade Slip for OH-58/OH-6 Aviators. April 1993.
DA Form 5866-R. Maneuver/Procedure Grade Slip for OH-58/OH-6 AO/AFSO. April 1993.
DA Form 7121-R. Battle-Rostered Crew Evaluation/Training Grade Slip. March 1992.

*This source was also used to develop this publication.

Department of the Army Pamphlet

*DA Pamphlet 738-751. Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A). 15 June 1992.

Department of Defense Flight Information Publications

Army Aviation Flight Information Bulletin
Flight Information Handbook

DOD flight information publications are available from Director, US Army Aeronautical 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 F--Tactical/ Transport. April 1989.

Federal Aviation Administration Publication

Airman's Information Manual

This publication is available from Director, US Army Aeronautical Services Agency, ATTN: MOAS-AI, Cameron Station, Alexandria, VA 22304-5050.

Field Manuals

*FM 1-107. Air-to-Air Combat. 12 October 1984.
*FM 1-112. Tactics, Techniques, and Procedures for the Attack Helicopter Battalion. 21 February 1991.
*FM 1-114. Tactics, Techniques, and Procedures for the Regimental Aviation Squadron. 21 February 1991.
*FM 1-116. Tactics, Techniques, and Procedures for the Air Cavalry/Reconnaissance Troop. 20 February 1991.
*FM 1-202. Environmental Flight. 23 February 1983.
*FM 1-203. Fundamentals of Flight. 3 October 1988.
*FM 1-230. Meteorology for Army Aviators. 30 September 1982.
*FM 1-240. Instrument Flying and Navigation for Army Aviators. 15 December 1984.

*FM 1-301. Aeromedical Training for Flight Personnel. 29 May 1987.
*FM 1-402. Aviator's Recognition Manual. 6 August 1984.

National Guard Regulation

*NGR 95-2100 Army National Guard: General Provisions and Regulations for Aviation Training. 1 July 1991.

Training Circulars

*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 to Individual and Crew Training. 20 May 1992.
*TC 1-211. Aircrew Training Manual for Utility Helicopter, UH-1. 9 December 1992.
*TC 6-40. Field Artillery, Manual Cannon Gunnery. 27 December 1988.

Technical Manuals

*TM 55-1520-214-10. Operator's Manual for Helicopter, Observation OH-6. 17 December 1976.
*TM 55-1520-214-23. Aviation Unit and Intermediate Maintenance Manual for Helicopter, Observation OH-6A. 31 December 1976.
*TM 55-1520-214-CL. Operator's and Crewmember's Checklist: Army OH-6A Aircraft. 1 May 1990.
*TM 55-1520-214-MTF. Maintenance Test Flight Manual for OH-6A Helicopter. 8 August 1983.
*TM 55-1520-228-100 Operator's Manual for Army Model OH-58A/C Helicopter. 17 January 1989.
*TM 55-1520-228-23-1. Aviation Unit and Intermediate Maintenance Manual for Army Model OH-58A and OH-58C Helicopters. 28 February 1989.
*TM 55-1520-228-23-2. Aviation Unit and Intermediate Maintenance Manual for Army Model OH-58A and OH-58C Helicopters. 28 February 1989.
*TM 55-1520-228-CL. Operator's and Crewmember's Checklist: Army OH-58A/C Helicopter. 17 January 1989.
*TM 55-1520-228-MTF. Maintenance Test Flight Manual for Army Model OH-58A/C Helicopter. 1 November 1988.
*TM 55-2840-231-23. Aviation Unit and Aviation Intermediate Maintenance Manual for Engine Assembly, Models T63-A-700. 27 February 1981.

*TM 55-2840-241-23. Aviation Unit and Aviation Intermediate Maintenance Manual for Engine, Aircraft, Gas Turbine Model T63-A-720. 2 November 1977.

Modification Work Order

*MWO 55-1520-228-50-25. Improved Tail Rotor Configuration. 20 February 1987.

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.

INDEX

This index is organized alphabetically by topics and subtopics. Topics and subtopics are identified by page numbers.

STANDARD EVALUATION/TRAINING GRADE SLIP

For use of this form, see TC 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 RECOMMENDATION

		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 TC 1-209 and TCs 1-211 through 1-219; the proponent agency is TRADOC.

Examinee's/Trainee's Name:______________________Date:____________

DA FORM 4507-2-R, MAY 87

CONTINUATION COMMENT SLIP

RW PERFORMANCE PLANNING CARD

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

DEPARTURE

PA	FAT
TAKEOFF GWT	LOAD
CALIBRATION FACTOR	FUEL

	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX TORQUE AVAIL			
CONT TORQUE AVAIL			
GO/NO-GO TORQUE (OGE/IGE)	/		
PREDICTED HOVER TORQUE			
HOVER OGE TORQUE			
MAX ALLOWABLE GWT (OGE/IGE)	/	/	
MAX R/C OR ENDURANCE IAS			
MAX RANGE IAS			
SINGLE-ENG CAPABILITY IAS (MIN/MAX)			/

VALIDATION FACTOR ______________________

SAFE PEDAL MARGIN YES______NO________

ARRIVAL

PA	FAT
LANDING GWT	

	DUAL ENG	SINGLE ENG CAL	SINGLE ENG IND
MAX ALLOWABLE GWT (OGE/IGE)	/	/	
MAX TORQUE AVAIL			
HOVER IGE TORQUE			
HOVER OGE TORQUE			

SAFE PEDAL MARGIN YES_______NO_______

DA FORM 4887-R, MAY 87

FUEL MANAGEMENT

FUEL/TIME	
START ________/________	BURNOUT ____________________Z
STOP ________/________	RESERVE ____________________Z
	CONSUMPTION RATE ____________LB PER HR

LONGITUDINAL CYCLIC TRIM

RET VNE KIAS	PROG VNE KIAS

CRUISE DATA

PA	FAT VNE KIAS

	DUAL ENG	SINGLE ENG
CRUISE SPEED	______IAS ______TAS	______IAS ______TAS
CRUISE TORQUE		
CRUISE FUEL FLOW		

OPTIONAL DATA

WEIGHT COMPUTATION

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

REMARKS:

MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (OH-58A/C)

For use of this form, see TC 1-215; 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 AND NORMAL ENGINE HEALTH INDICATOR TEST	
6	BEFORE-TAKEOFF CHECK	
7	TAKEOFF TO A HOVER	
8	HOVER POWER CHECK	
9	HOVERING TURNS	
10	SIDEWARD FLIGHT	
11	FORWARD HOVERING FLIGHT	
12	PYLON ISOLATION MOUNT CHECK	
13	POWER CYLINDER CHECK	
14	ENGINE RESPONSE CHECK	
15	TAKEOFF AND CLIMB CHECK	
16	CONTROL RIGGING CHECKS	
17	AUTOROTATION RPM CHECK	
18	ENGINE PERFORMANCE CHECK	
19	HYDRAULICS-OFF CHECK	
20	FLIGHT INSTRUMENTS CHECK	
21	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	
22	AFTER-LANDING AND ENGINE-SHUTDOWN CHECKS	
23	SPECIAL/DETAILED PROCEDURES	
24	ORAL EVALUATION	
25		
26		
27		
28		
29		
30		
31		
32		
33		

NOTE: ITEMS 25 THROUGH 33 INTENTIONALLY LEFT BLANK FOR LATER USE.

MAINTENANCE TEST FLIGHT MANEUVERS GRADE SLIP (OH-6)

For use of this form, see TC 1-215; 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 AND NORMAL ENGINE HEALTH INDICATOR TEST	
6	BEFORE-TAKEOFF CHECK	
7	TAKEOFF TO A HOVER	
8	HOVERING TURNS	
9	SIDEWARD FLIGHT	
10	FORWARD HOVERING FLIGHT	
11	ENGINE RESPONSE CHECK	
12	LOW RPM HOVER	
13	TAKEOFF AND CLIMB CHECK	
14	CONTROL RIGGING CHECK	
15	AUTOROTATION RPM CHECK	
16	ENGINE PERFORMANCE CHECK	
17	COLLECTIVE BUNGEE CHECK	
18	FLIGHT INSTRUMENTS CHECK	
19	COMMUNICATION AND NAVIGATION EQUIPMENT CHECKS	
20	BEFORE-LANDING CHECKS	
21	AFTER-LANDING CHECKS	
22	ENGINE-OUT/REIGNITION CHECK	
23	ENGINE SHUTDOWN CHECKS	
24	SPECIAL/DETAILED PROCEDURES	
25	ORAL EVALUATION	
26		
27		
28		
29		
30		
31		
32		

NOTE: ITEMS 26 THROUGH 32 INTENTIONALLY LEFT BLANK FOR LATER USE.

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AVIATORS

For use of this form, see TC 1-215; the proponent agency is TRADOC.

Examinee's/Trainee's Name ______________________ **Date** __________

Instructor or evaluator will sign in the first unused block.

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
1	CREW MISSION BRIEFING		23	HOVERING AUTOROTATION	
2	VFR FLIGHT		24	SIMULATED ENGINE FAILURE, IGE HOVER	
3	IFR FLIGHT		25	SIMULATED ENGINE FAILURE AT ALTITUDE	
4	DD FORM 365-4		26	SIMULATED HYDRAULIC SYSTEM MALFUNCTION	
5	DA FORM 4887-R		27	STANDARD AUTOROTATION	
6	PREFLIGHT INSPECTION		28	AERIAL OBSERVATION	
7	ENG START, RUN, HOVER, BEFORE-T/O, LDG, AND AFTER-LDG TASKS		29	EMERGENCY PROCEDURES	
8	HOVER POWER CHECK		30	LOW-LEVEL AUTOROTATION	
9	HOVERING FLIGHT		31	LOW-LEVEL AND LOW-AIRSPEED AUTOROTATION	
10	NORMAL TAKEOFF		32	STANDARD AUTOROTATION WITH TURN	
11	TRAFFIC PATTERN FLIGHT		33	INSTRUMENT TAKEOFF	
12	FUEL MANAGEMENT PROCEDURES		34	RADIO NAVIGATION	
13	EMERGENCY PROCEDURES NVG FAILURE		35	HOLDING PROCEDURES	
14	PILOTAGE AND DEAD RECKONING		36	UNUSUAL ATTITUDE RECOVERY	
15	VMC APPROACH		37	RADIO COMMUNICATION PROCEDURES	
16	SLOPE OPERATIONS		38	PROCEDURES FOR TWO-WAY RADIO FAILURE	
17	TERRAIN FLIGHT MISSION PLANNING		39	NONPRECISION APPROACH	
18	TERRAIN FLIGHT TAKEOFF		40	PRECISION APPROACH	
19	TERRAIN FLIGHT		41	INADVERTENT IMC PROCEDURES/ VHIRP	
20	HOVER OGE CHECK		42	MASKING AND UNMASKING	
21	NOE DECELERATION		43	TACTICAL COMMUNICATION PROCEDURES AND ECCM	
22	TERRAIN FLIGHT APPROACH		44	TACTICAL REPORT	

DA FORM 5865-R, APR 93 EDITION OF FEB 90 IS OBSOLETE

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AVIATORS

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
45	TECHNIQUES OF MOVEMENT		69	AREA RECONNAISSANCE	
46	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION		70	-10 EXAM	
47	AIRCRAFT SURVIVABILITY EQUIPMENT		71	ORAL EVALUATION	
48	ACTIONS ON CONTACT				
49	WIRE OBSTACLES				
50	MARK XII IFF SYSTEM				
51	SIMULATED ANTITORQUE MAL-FUNCTION (FIXED-PEDAL SETTING)				
52	PINNACLE OR RIDGELINE OPERATION				
53	FM RADIO HOMING				
54	EVASIVE MANEUVERS				
55	MULTIAIRCRAFT OPERATIONS				
56	RECONNOITER/RECOMMEND AN LZ/PZ				
57	ROUTE RECONNAISSANCE				
58	INDIRECT FIRE				
59	INSTALLATION AND LOADING OF WEAPONS				
60	PREFLIGHT INSPECTION OF WEAPON SYSTEM				
61	ATAS ENGAGEMENT				
62	WEAPON SYSTEMS (SAFE AND CLEAR)				
63	COMBAT POSITION				
64	TARGET HANDOVER TO ATTACK HELICOPTER				
65	HOLDING AREA RECON AND RECOMMENDATION				
66	SECURITY MISSION		LEGEND :		
67	AERIAL RADIOLOGICAL SURVEY		○ STANDARDIZATION □ INSTRUMENT		
68	ZONE RECONNAISSANCE		◇ NVG		

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AO/AFSO

For use of this form, see TC 1-215; the proponent is TRADOC.

Examinee's/Trainee's Name ______________________________ **Date** __________

Instructor or evaluator will sign in the first unused block.

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
1	PREFLIGHT INSPECTION		25	AIRCRAFT SURVIVABILITY EQUIPMENT	
2	ENG START, RUN, HOVER, BEFORE-T/O, LDG, AND AFTER-LDG TASKS		26	ACTIONS ON CONTACT	
3	STRAIGHT-AND-LEVEL FLIGHT		27	WIRE OBSTACLES	
4	TURNS, CLIMBS, AND DESCENTS		28	MARK XII IFF SYSTEM	
5	HOVERING FLIGHT		29	FM RADIO HOMING	
6	NORMAL TAKEOFF		30	EVASIVE MANEUVERS	
7	FUEL MANAGEMENT PROCEDURES		31	MULTIAIRCRAFT OPERATIONS	
8	EMERGENCY PROCEDURES NVG FAILURE		32	RECONNOITER/RECOMMEND AN LZ/PZ	
9	PILOTAGE AND DEAD RECKONING		33	ROUTE RECONNAISSANCE	
10	VMC APPROACH		34	INDIRECT FIRE	
11	TERRAIN FLIGHT MISSION PLANNING		35	INSTALLATION AND LOADING OF WEAPONS	
12	AERIAL OBSERVATION		36	PREFLIGHT INSPECTION OF WEAPON SYSTEMS	
13	EMERGENCY PROCEDURES		37	ATAS ENGAGEMENT	
14	RADIO NAVIGATION		38	WEAPON SYSTEMS (SAFE AND CLEAR)	
15	UNUSUAL ATTITUDE RECOVERY		39	COMBAT POSITION	
16	RADIO COMMUNICATION PROCEDURES		40	TARGET HANDOVER TO ATTACK HELICOPTER	
17	PROCEDURES FOR TWO-WAY RADIO FAILURE		41	HOLDING AREA RECON AND RECOMMENDATION	
18	NONPRECISION APPROACH		42	SECURITY MISSION	
19	PRECISION APPROACH		43	AERIAL RADIOLOGICAL SURVEY	
20	INADVERTENT IMC PROCEDURES/VHIRP		44	ZONE RECONNAISSANCE	
21	MASKING AND UNMASKING		45	AREA RECONNAISSANCE	
22	TACTICAL COMMUNICATION PROCEDURES AND ECCM		46	ORAL EVALUATION	
23	TACTICAL REPORT		47		
24	MAJOR US/ALLIED AND THREAT EQUIPMENT IDENTIFICATION		48		

DA FORM 5866-R, APR 93 EDITION OF FEB 90 IS OBSOLETE

MANEUVER/PROCEDURE GRADE SLIP FOR OH-58/OH-6 AO/AFSO

NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR	NO	STANDARDIZATION EVALUATION/ TRAINING TASKS	GR
47			72		
48			73		
49			74		
50			75		
51			76		
52			77		
53			78		
54			79		
55			80		
56			81		
57			82		
58			83		
59			84		
60			85		
61			86		
62			87		
63			88		
64			89		
65			90		
66			91		
67			92		
68			93		
69					
70					
71					

LEGEND:
○ STANDARDIZATION
◇ NVG

BATTLE-ROSTERED CREW EVALUATION/TRAINING GRADE SLIP

For use of this form, see TC 1-209 and TCs 1-211 through 1-219; the proponent agency is TRADOC.

BATTLE-ROSTERED CREW EXAMINEES/ TRAINEES		NAME	RANK
	PC:		
	PI:		
	NONRATED CREW MEMBERS		
	DUTY SYMBOL	NAME	RANK
	UNIT:		
EVALUATOR/ INSTRUCTOR	NAME		RANK
	UNIT:		

CREW DATA

TOTAL BATTLE-ROSTERED CREW HOURS:	DATE DESIGNATED A BATTLE-ROSTERED CREW:
PURPOSE: EVALUATION/TRAINING	
TIME TODAY:	CUMULATIVE TIME:

TYPE AIRCRAFT:________________

CREW TASK 1 _____ D/N/NVD	CREW TASK 6 _____ D/N/NVD
CREW TASK 2 _____ D/N/NVD	CREW TASK 7 _____ D/N/NVD
CREW TASK 3 _____ D/N/NVD	CREW TASK 8 _____ D/N/NVD
CREW TASK 4 _____ D/N/NVD	CREW TASK 9 _____ D/N/NVD
CREW TASK 5 _____ D/N/NVD	CREW TASK 10 _____ D/N/NVD

DAY	NIGHT	WX	SIMULATOR	NVG	NVS	

EVALUATOR/INSTRUCTOR RECOMMENDATIONS

- ☐ (ISSUE) (VALIDATE) CREW QUALIFICATIONS
- ☐ (SUSPEND) (REVOKE) CREW QUALIFICATIONS
- ☐ REQUIRES ADDITIONAL (FLIGHT) (ACADEMIC) (SIMULATION DEVICE) TRAINING
- ☐ SEE BACK FOR COMMENTS

I HAVE DEBRIEFED THE EXAMINEES/TRAINEES AND INFORMED THEM OF THEIR STATUS.

EVALUATOR'S/INSTRUCTOR'S SIGNATURE:________________

WE HAVE BEEN DEBRIEFED BY THE EVALUATOR/INSTRUCTOR AND UNDERSTAND OUR CURRENT STATUS.

PC'S SIGNATURE:________________

PI'S SIGNATURE:________________

NONRATED CREW MEMBERS' SIGNATURES: ________________

____

OVERALL GRADE FOR THIS FLIGHT IS: | S | U | NA | DATE: ________

DA FORM 7121-R, MAR 92

COMMENTS

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

Milton H. Hamilton
MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
03888

DISTRIBUTION :

Active Army, USAR, and ARNG: To be distributed in accordance with DA Form 12-11E, requirements for TC 1-215, Aircrew Training Manual, Observation Helicopter, OH-58A/C and OH-6 Aviator/Aeroscout Observer Qty rqr block no. 4622).

☆ U. S. Government Printing Office: 1993 — 728-027/60150