TC 3-04.43

Aircrew Training Manual, OH-58 Kiowa and TH-67 Creek Helicopter

May 2012

Headquarters, Department of the Army

Change 1

Headquarters
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Washington, DC, 5 February 2014

Aircrew Training Manual, OH-58 Kiowa and TH-67 Creek Helicopter

1. Change TC 3-04-43, May 2012, as follows:

Remove old pages:	Insert new pages:
i and ii	i and ii
2-3 and 2-8	2-3 and 2-8
3-5 through 3-7	3-5 through 3-7
4-11 through 4-16	4-11 through 4-22
A-1	A-1
C-1 through C-6	C-1 through C-5
Reference-1	Reference-1

2. A star (*) marks new, changed, or location of deleted material.

3. File this transmittal sheet in front of the publication.

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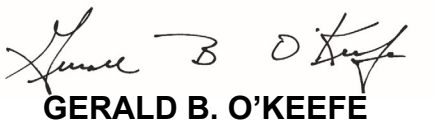

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AIRCREW TRAINING MANUAL OH-58 KIOWA and TH-67 CREEK HELICOPTER

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PREFACE

The Training Circular (TC) 3-04.43 standardizes Aircrew Training Programs (ATPs) and flight evaluation procedures. This aircrew training manual (ATM) provides specific guidelines for executing Observation Helicopter (OH)-58A/C and Training Helicopter (TH)-67 aircrew training. It is based on training principles outlined at the Army Training Network, located on the web at: https://atn.army.mil/index.aspx, under the Training Management tab. The OH-58A/C and TH-67 ATM establishes crewmember qualification, refresher, mission, and continuation training and evaluation requirements. This manual applies to all OH-58A/C and TH-67 crewmembers and their commanders in the active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the United States. Army Reserve (USAR) unless otherwise stated.

This manual is not a stand-alone document; all requirements of Army Regulation (AR) 600-105 (Aviation Service of Rated Army Officers), AR 600-106 (Flying Status for Non-rated Army Aviation Personnel), National Guard regulation (NGR) 95-210 (Army National Guard: General Provisions and Regulations for Aviation Training), and training circular TC 3-04.11 (Aircrew Training Program [ATP] Commander's Guide to Individual Crew and Collective Training) to the ATP must be met. If differences exist between the maneuver description in the operator's manuals, this manual is the governing authority for training and flight evaluation purposes only. The operator's manual is the governing authority for operations of the aircraft. Implementation of this manual conforms to AR 95-1 (Aviation Flight Regulations) and TC 3-04.11. If a conflict exists between this manual and TC 3-04.11 then TC 3-04.11 will take precedence.

This manual will help aviation commanders, at all levels, develop a comprehensive ATP. By using the ATM, commanders ensure that individual crewmember and aircrew proficiency is commensurate with their units' mission and that aircrews routinely employ standard techniques and procedures.

Crewmembers will use this manual as a "how to" source for performing crewmember duties. It provides performance standards and evaluation guidelines so that crewmembers know the level of performance expected. Each task provides a description of how the task should be completed to meet the standard.

Standardization officers, evaluators, and unit trainers (UTs) will use this manual and TC 3-04.11 as primary tools to assist the commander in developing and implementing the ATP.

ATP commanders of active Army, NG and AR units operating the OH-58A/C and/or the TH-67 will use this ATM and TC 3-04.11 to develop individual commander's task lists (CTL) for assigned aviators. ATP commanders with assigned contract pilots (PIs) will develop individual commander's task lists tailored to the current contract position using this ATM, TC 3-04.11, AR 95-20 (Contractor's Flight and Ground Operations [Note: this is also AFI 10-220]), current flight training guides (FTGs) and/or local command directives.

The proponent of this publication is United States Army Training and Doctrine Command (TRADOC). Send comments and recommendations on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) or automated link: http://www.apd.army.mil through the aviation unit commander to: Commander, U.S Army Aviation Center of Excellence (USAACE), attention (ATTN): ATZQ-TDT-F, (Flight Training Branch) Building 4507, Andrews Avenue, Fort Rucker, Alabama (AL) 36362-5263 or direct electronically mail (e-mail) questions to: Ruck.ATZQ-TDT-F@conus.army.mil. Recommended changes may also be e-mailed to: RUCK.ATZQ-ES@conus.army.mil.

This publication implements portions of Standardization Agreement (STANAG) 3114 (Edition Eight).

This publication has been reviewed for operations security considerations.

Chapter 1

Introduction

This ATM describes training requirements for OH-58A/C and TH-67 crewmembers. It will be used with AR 95-1, AR 600-105, AR 600-106, NGR (AR) 95-210, TC 3-04.11, and other applicable publications. The tasks in this ATM enhance training in both individual crewmember and aircrew proficiency. The training focuses on the accomplishment of tasks that support the unit's mission. The mission essential task list (METL) will dictate the scope and level of training to be achieved individually by crew members and collectively by aircrews. Commanders must ensure that aircrews are proficient in mission-essential tasks.

1-1. CREW STATION DESIGNATION. The commander will designate a crew station for each aviator. The CTL must clearly indicate all crew station designations. Aviators will be trained and must maintain proficiency in each of the PIs stations they are designated to occupy. Instructor pilots (IPs), standardization instructor pilots (SPs), instrument examiners (IEs), and maintenance test pilots (MPs) must maintain proficiency in both seats. Commanders may designate other aviators in both seats. Aviators designated to fly from both pilot's seats will be evaluated in each seat during readiness level (RL) progression and standardization evaluations. It is not required to evaluate every task from each PI station. Commanders will develop a program to meet this requirement.

1-2. SYMBOL USAGE AND WORD DISTINCTIONS.

a. **Symbol usage.** The diagonal (/) means one or the other or both. For example, IP/SP may mean IP or SP, or it may mean IP and SP.

b. **Word distinctions.**

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

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

(b) ***Caution.*** A caution is an operating procedure or practice that, if not strictly observed, could result in damage to or destruction of equipment.

(c) ***Note.*** A note highlights essential information of a non-threatening nature.

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

(a) Will, shall, must, indicate a mandatory requirement.

(b) Should is used to indicate a non-mandatory but preferred method of accomplishment.

(c) May or can is used to indicate an acceptable method of accomplishment.

c. **Night vision devices (NVDs).**

(1) A night vision system (NVS) refers to a system attached to the aircraft.

(2) Night vision goggles (NVG) refers to any image intensifier system; for example, the AN/AVS-6 [aviator's night vision imaging system (ANVIS)].

(3) NVD refers to NVS or NVG.

d. **Personnel terminology**.

(1) The RCM is an aviator. Therefore, the terms “rated crewmember,” “aviator” and “pilot” are used synonymously.

(2) Pilot-in-command (PC). The PC has overall responsibility for the operation of the aircraft from pre-mission planning to mission complete and assigns duties to the crew, as necessary. Additionally, the PC is the primary trainer of the PIs in the development of experience and judgment.

(3) PI. The PI will complete all tasks assigned by the PC.

(4) UT. The UT is a specialized trainer (RCM or NCM) appointed by the commander to assist with unit training. The UT trains RL 2 crewmembers in mission/additional tasks in accordance with (IAW) the ATM and unit METL. To be qualified as an UT, the crewmember must demonstrate a higher level of knowledge, proficiency and the ability to train other crewmembers IAW the IPs handbook.

(5) IP. The IP trains and evaluates RCM and NCM, as appointed by the commander to assist with unit training. The IP may evaluate an IP/SP during proficiency flight evaluation (PFE) resulting from a lapse in aircraft or NVD currency.

(6) IE. The IE trains and evaluates instrument tasks, as directed by AR 95-1 and local requirements.

(7) SP. The SP trains and evaluates RCM and NCM and supervises and maintains the standardization program.

(8) MP. The MP conducts maintenance test flight (MTF) procedures IAW Chapter 5.

(9) ME. The ME trains and evaluates MPs and MEs IAW Chapter 5.

(10) NCM. The NCM is a non-aviator who performs operation-essential duties aboard an aircraft.

Chapter 2

Training

This chapter describes requirements for qualification, RL progression, and continuation training. Crewmember qualification requirements will be IAW AR 95-1, TC 3-04.11 and this ATM. Training will follow a logical progression sequence. Aviators/crewmembers will demonstrate proficiency in all base tasks in all appropriate modes as noted and be properly progressed prior to being trained on mission tasks.

2-1. QUALIFICATION TRAINING.

a. **Aircraft qualification.** Initial qualification training will be conducted using this ATM, USAACE approved programs of instruction (POIs), FTGs and lesson plans to conduct academic and flight training.

(1) Qualification training in the TH-67 series/group aircraft will be conducted at the USAACE. The TH-67 qualification is listed in the remarks section of the DA Form 759 (Individual Flight Record and Flight Certificate-Army) upon completion of flight school.

(2) Qualification training in the OH-58A/C series/group aircraft may be conducted at the USAACE or the Western Army National Guard Aviation Training Site (WAATS).

(3) OH-58A/C qualification training may also be conducted locally by units approved by Headquarters, Department of the Army (HQDA) and/or Chief, NG Bureau (CNGB) IAW AR 95-1. While performing aircraft qualifications at the unit, the most current approved USAACE POI and FTG will be used. The total course time will not vary from the published POI/FTG training/flight hours by more than 10 percent.

b. **Aircraft Series/Group qualification requirements.** See Appendix A.

c. **NVG qualification.** Initial NVG and aircraft NVG qualification will be IAW this ATM and TC 3-04.11.

(1) Initial NVG qualification. Initial qualification will be conducted at the USAACE or DA-approved training site, IAW the USAACE approved POI, or locally using the USAACE NVG training support package (TSP). The USAACE NVG TSP may be obtained by writing to the Commander, USAACE, ATTN: Chief, NVD Branch, 110th Aviation Brigade (AB), Fort Rucker, AL 36362-5000 or e-mail RUCK.ATZQ-ATB-NS@conus.army.mil. The NVG TSP can also be downloaded through AKO from the NVD Branch knowledge center at: https://www.us.army.mil/suite/kc/582650.

(2) Aircraft NVG qualification.

(a) Academic training. The crewmember will receive training and demonstrate a working knowledge of the topics of paragraph 3-4b (6). Academic training must be completed and annotated RL 2 designation.

(b) Flight training. The crewmember will receive training, and demonstrate proficiency, in all base tasks marked with an "**X**" in the "**NG**" (night goggles) and "**Eval**" (evaluation) column of table 2-2, page 2-3. The crewmember will also receive training and demonstrate proficiency in any other base tasks specified for NVG on the CTL.

(3) Minimum flight hours. There are no minimum flight hour requirements. The qualification is proficiency based determined by the crewmember's ability to satisfactorily accomplish the designated tasks.

d. MP, UT and evaluator prerequisites and requirements. Personnel in these categories must meet the requirements stated in AR 95-1.

2-2. REFRESHER TRAINING. The refresher training program is designed for RL 3 aviators. It enables them to regain proficiency in all base tasks. This paragraph lists refresher training requirements and provides guidelines for developing refresher training programs. Table 2-1 provides a guide for developing a refresher flight training program.

Table 2-1. Refresher flight training guide

Flight Instruction	***Hours***
Local area orientation	2.0
Demonstration and practice of base tasks	8.0
Flight evaluation	2.0
Total hours	***12.0***
Note: Refresher flight training is proficiency-based.	

a. Aircraft refresher training.

(1) Academic training. The crewmember will receive training and demonstrate a working knowledge of the applicable academic evaluation topics in paragraph 3-4b, and complete the operator's manual written examination. Academic training must be completed and annotated prior to RL 1 designation.

(2) Flight training. The crewmember will receive training and demonstrate proficiency from either crew station in each base task and in the modes marked with an "**X**" in the "**D**" (day), "**N**" (night), "**NG**", and "**I**" (instrument) columns of table 2-2, page 2-3. Crewmembers must demonstrate proficiency in all required tasks and be designated RL 2 prior to undergoing mission training.

b. NVG refresher training.

(1) Academic training. The crewmember will receive training and demonstrate a working knowledge of the applicable academic evaluation topics in paragraph 3-4b. Academic training must be completed prior to flight training.

(2) Flight training. The crewmember will receive training and demonstrate proficiency in all base tasks marked with an "**X**" in the "**NG**" column of table 2-2, page 2-3, and any other base tasks specified for NVG on the task list.

(3) Minimum flight hours. There are no minimum flight hour requirements. The training is proficiency based determined by the crewmember's ability to satisfactorily accomplish the designated tasks.

*Table 2-2. Base task list

Legend:

D	Day mode of flight
Eval	Mandatory for selected flight evaluations
I	Instrument mode of flight (Tasks that are mandatory for instrument flight evaluations)
N	Night unaided mode of flight
NG	NVG mode of flight (Tasks that are mandatory for NVG annual evaluations)
S	Standardization flight evaluation (mandatory)

Task	*Title*	*D*	*N*	*NG*	*I*	*Eval*
1000	Participate in a Crew Mission Briefing	X				S/I/NG
1004	Plan a Visual Flight Rules Flight	X				S/NG
1006	Plan a Instrument Flight Rules Flight	X				I
1010	Prepare a Performance Planning Card	X				S/I/NG
1012	Prepare/Validate Aircraft Weight and Balance	X				S/I/NG
1014	Operate Aviation Life Support Equipment	X				S/I/NG
1022	Perform Pre-Flight Inspection	X				S/I/NG
1024	Perform Before-Starting Engine through Before-Leaving Helicopter Checks	X	X	X		S/I/NG
1026	**Maintain Airspace Surveillance**	X	X	X	X	S/NG/I
1028	**Perform Hover PWR Check**	X	X	X		S/I/NG
1030*	**Perform Hover Out-of-Ground Effect Check**	X		X		S/NG
1032	Perform Communications Procedures	X				S/I/NG
1038	**Perform Hovering Flight**	X	X	X		S/NG
1040	**Perform Visual Meteorological Conditions Takeoff**	X	X	X		S/NG
1044	**Navigate by Pilotage and Dead Reckoning**	X	X	X		S/NG
1048	Perform Fuel Management Procedures	X				S/I/NG
1052	**Perform Visual Meteorological Conditions Maneuvers**	X	X	X		S/NG
1058	**Perform Visual Meteorological Conditions Approach**	X	X	X		S/NG
1062	**Perform Slope Operations**	X	X	X		S/NG
1070	Respond to Emergencies	X				S/I/NG
1072	**Respond to Engine Failure at a Hover**	X				S
1074	**Respond to Engine Failure at Cruise**	X				S or I
1076(1)	**Respond to Hydraulic System Malfunction**	X				S
1082(1)	**Perform Autorotation**	X				S
1155	**Negotiate Wire Obstacles**	X		X		S/NG
1170	**Perform Instrument Takeoff**				X	
1172	**Perform Radio Navigation**				X	
1174	**Perform Holding Procedures**				X	
1176	**Perform Non-Precision Approach**				X	I
1178	**Perform Precision Approach**				X	I
1182	**Perform Unusual Attitude Recovery**				X	S/I
1184	**Respond to Inadvertent Instrument Meteorological Conditions**	X		X	X	S/I, NG
1321(1)	**Perform Anti-Torque Malfunction**	X				S
1323	**Perform Hovering Autorotation**	X				S
1327(1)	**Perform Low-Level Autorotation**	X				S
1333(1)	**Perform Low-Level/Low-Airspeed Autorotation**	X				S
1335(1)	**Perform Autorotation with Turn**	X				S
1400*	**Perform Maximum Performance Takeoff**	X				S
1402*	Perform Tactical Flight Mission Planning	X				S
1407*	**Perform Terrain Flight Takeoff**	X		X		S

***Table 2-2. Base task list**

Legend:

D	Day mode of flight
Eval	Mandatory for selected flight evaluations
I	Instrument mode of flight (Tasks that are mandatory for instrument flight evaluations)
N	Night unaided mode of flight
NG	NVG mode of flight (Tasks that are mandatory for NVG annual evaluations)
S	Standardization flight evaluation (mandatory)

Task	*Title*	*D*	*N*	*NG*	*I*	*Eval*
1408*	**Perform Terrain Flight**	X		X		S
1409*	**Perform Terrain Flight Approach**	X		X		S
1411*	**Perform Terrain Flight Deceleration**	X		X		S
1472*	**Perform Aerial Observation**	X		X		S
1474*	**Respond to Night Vision Goggle Failure**			X		NG

Notes:
* For training at DA approved training facilities only, these task are not mandatory; but may be selected at the discretion of the ATP commander.
(1) Task authorized only during initial aircraft qualification and for IPs/SPs designated to conduct touchdown emergency procedures. Task is a required annual proficiency and readiness test (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.

2-3. MISSION TRAINING. Mission training develops the crewmember's ability to perform specific mission/additional tasks selected by the commander to support the unit's METL. Mission training should be conducted during actual mission support or collective training.

a. Training requirements.

(1) Academic training. The crew member will receive training and demonstrate a working knowledge of the applicable mission topics in paragraph 3-4b.

(2) Flight training. The crewmember will receive flight training and demonstrate proficiency in the mission/additional tasks, in each mode, as specified on the task list for the crew member's position.

b. NVG mission training. NVG mission training will be per the commander's training program that specifies tasks. When commanders determine a requirement for using NVG in mission profiles, they must develop a mission training program to support the unit's METL. Before undergoing NVG mission training, the aviator must complete NVG qualification or refresher training and must be NVG current in the OH-58A/C and/or the TH-67.

(1) Academic training. The crewmember will receive training and demonstrate a working knowledge of the subject areas designated by the commander.

(2) Flight training. The crewmember will receive flight training and demonstrate proficiency in the mission and additional NVG tasks, as specified on the task list for the crewmember's position.

(3) Minimum flight hours. There are no minimum flight hour requirements. The training is proficiency based determined by the crewmember's ability to satisfactorily accomplish the designated tasks. NVG mission training may be included as part of refresher training.

c. MP and ME mission training. MPs and MEs should be limited to duties in one primary and one alternate (or additional) aircraft. The tasks shown in table 2-3 and outlined in Chapter 5 are mandatory tasks for aviators designated to perform maintenance test flights (MTF); the tasks will be included on the individual's CTL. Commanders are not authorized to delete any MTF tasks. Personnel performing as MPs should be limited to duties in a maximum (MAX) of two aircraft. If the unit mission dictates performance of maintenance operations during other than daylight hours and if an individual MP/ME is selected to will be included on the individual's CTL. Commanders are not authorized to delete any MTF tasks. Personnel performing as MPs should be limited to duties in a maximum (MAX) of two aircraft. If the unit mission dictates performance of maintenance operations during other than daylight hours and if an individual MP/ME is selected to perform operations during night unaided and NVG modes, then familiarization

maintenance test flight training of tasks listed in the table is required. These tasks will only be trained under NVG modes of flight upon completion of individual NVG mission training and designation of RL 1.

Table 2-3. Maintenance test pilot task list

Task	*Title*
4000	Perform Prior-to-Maintenance Test Flight Checks
4084	Perform Before-Starting Engine Checks
4088	Perform Starting Engine Checks
4090	Perform Engine Run-Up Checks
4128	Perform Before-Takeoff Checks
4132	Perform Takeoff to a Hover Check
4142	Perform Hover PWR Check
4150	Perform Hovering Control Rigging Check
4165	Perform Pylon Isolation Mount Check
4170	Perform PWR Cylinder Check
4172	Perform Engine Response Check
4194	Perform Flight Instruments Check
4210	Perform Takeoff and Climb Check
4232	Perform Control Rigging Check
4236	Perform Autorotation Rotor Revolutions Per Minute Checks
4238	Perform Engine Performance Check
4244	Perform Hydraulics-Off Check
4252	Perform Vibration Analysis
4272	Perform Communications Check
4276	Perform Special/Detailed Procedures
4280	Perform Before-Landing Check
4282	Perform After-Landing Check
4284	Perform Engine Shutdown Check

2-4. CONTINUATION TRAINING. This paragraph outlines the tasks and aircraft flight hours that aviators must complete to support the unit's METL. TC 3-04.11 lists the requirements for maintaining RL 1. The required performance standards are specified in chapters 4 and 5.

Note. UTs and evaluators may credit those hours they fly while performing assigned duties, regardless of their crew station, toward their semiannual flying-hour requirements.

a. **Semiannual flying-hour requirements-aircraft.** The minimum requirements for aviators are as follows—

(1) Flight activity category (FAC) 1– 40 Hours.

(2) FAC 2 – 30 Hours.

(3) FAC 3 – Not applicable for OH-58A/C aviators due to the lack of a compatible flight simulator.

b. **NVG** – 9 Hours.

c. **Hood or weather** – 3 Hours.

Note. The aviator may be required to fly additional hours of hood if directed by the commander.

d. **Annual task and iteration requirements.** The minimum requirements are—

(1) One iteration of all day, night, instrument, and technical base tasks (as designated with an "**X**" in the mode in table 2-2, page 2-3). The more demanding mode does not apply.

(2) One iteration of mandatory NVG tasks as indicated in the table. (An "**X**" in the NVG column indicates mandatory NVG tasks for aviators who maintain NVG currency).

(3) An NVG annual evaluation of all base tasks indicated by an NG in the EVAL column for those aviators and crewmembers who maintain NVG currency.

(4) An iteration(s) of all mission/additional tasks as determined by the commander.

Note. Unless designated by the commander, aviators will only perform tasks in the modes specified on table 2-2, page 2-3. This does not apply to technical tasks.

Note. In addition to the required minimum annual tasks and iterations, MPs will perform a minimum of four iterations of the MTF tasks listed in table 2-4, page 2-7, annually. MEs will perform two iterations from each flight crew station annually. Each MTF mission task listed is mandatory for an MTF standardization evaluation. Personnel that are required to perform MTF duties in an additional or alternate aircraft will perform four iterations of the required tasks in each additional or alternate aircraft.

Note. If unit missions dictates performance of maintenance operations during other than daylight hours and the MP/ME has been trained for night unaided and NVG maintenance test flights, then one annual iteration of all tasks listed in table 2-4, page 2-7, is required in the mode of flight that was trained.

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

2-5. TASK LISTS.

a. **Base tasks.** Table 2-2, page 2-4, lists the crewmember base tasks. An "**X**" under the mode of flight column denotes the task as a mandatory task for RL progression in that mode of flight.

b. **Maintenance test pilot tasks.** Table 2-3, page 2-5, lists the maintenance test pilot tasks.

c. **Tactical/mission tasks.** Table 2-4 lists the tactical/mission tasks that may be selected by the commander based upon the unit's mission requirements.

***Table 2-4. Tactical/mission task list**

Task	*Title*
2010	**Perform Multi-Aircraft Operations**
2049	**Perform Global Positioning System Aided Navigation**
2050	Develop an Emergency Global Positioning System Recovery Procedure
2051	**Perform Emergency Global Positioning System Recovery Procedure**
2061	**Perform Thermal Imaging System Observation**
2067	Select Landing Zone/Pick-up Zone /Holding Area
2125	**Perform Pinnacle or Ridgeline Operations**
2205	Locate Target Using Latitude and Longitude Coordinates
2215	**Perform Platform Landing/Takeoff Operations**
2225	Perform Border Operations
2230	**Perform Platform Landing/Takeoff Operations**
2235	Perform Shoreline Observation
2240	**Perform High Altitude Operations–High/Low Reconnaissance**
2250	**Perform Electronically Aided Navigation**
2410	**Perform Masking and Unmasking**
2412	**Perform Evasive Maneuvers**
2413	**Perform Actions on Contact**
2471	**Perform Target Handover**

***Table 2-4. Tactical/mission task list**

Task	*Title*
2530	**Conduct Vehicle/Vessel Observation**
2540	**Perform Fixed Target Observation**
2600	**Operate High Powered Illumination System**

d. **Task groups.**

(1) Performance Task. An ATM performance task is defined as a task primarily designed to measure the P*s ability to perform, manipulate the controls, and respond to tasks primarily affected by the conditions/mode of flight. These tasks are significantly affected by the conditions/mode of flight; therefore, the condition/mode under which the task must be performed is specified. These tasks are listed in **BOLD** throughout this manual.

(2) Technical Task. An ATM technical task may be performed under all conditions regardless of the listed task iteration requirements. Technical tasks are characterized as those tasks that measure the crewmembers ability to plan, preflight, brief, debrief, or operate onboard systems, sensors, and/or avionics while in flight or on the ground. These tasks are not significantly affected by the mode of flight and may be performed or evaluated in any mode or either seat. These tasks are in lower case and plain type throughout this manual.

Note. The requirement to perform instrument tasks in similar/additional aircraft, in category, will be at the discretion of the commander.

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e. **Evaluation guidelines**. Aviators designated to fly from both PI seats are evaluated, in each seat, during APART evaluations. However, not all tasks must be evaluated from each crew station. Other positions may be evaluated at the discretion of the evaluator. APART and annual evaluation tasks are designated by an "**S**", "**I**" and/or "**NG**" in the "**EVAL**" column of table 2- 2, page 2-3. The tasks selected under the "N" column do not need to be evaluated during the standardization evaluation unless designated by the commander. Tasks evaluated in a more demanding mode will suffice for task required in a lesser demanding mode. Mission tasks will be evaluated during the APART if the task is on the individual's CTL and designated with an "E" for evaluation. The commander should select mission/additional mission tasks for evaluation based on the unit's METL. Refer to Chapter 5 for MP/ME APART requirements.

2-6. CURRENCY REQUIREMENTS.

a. **Aircraft currency**. Aircraft currency will be IAW AR 95-1 and this paragraph. At a minimum, an aviator must participate in a flight every 60 consecutive days from either PI station. A crewmember whose currency has lapsed must complete a PFE given in the aircraft by an IP/SP. Minimum tasks to be evaluated are listed below. The commander may designate additional base/mission tasks for this evaluation. For currency, an IP can evaluate an SP.

(1) Task 1000 – Participate in a Crew Mission Briefing.

*(2) Task 1010 – Prepare a Performance Planning Card.

(3) Task 1012 – Verify Aircraft Weight and Balance.

(4) Task 1014 – Operate Aviation Life Support Equipment.

(5) Task 1022 – Perform Pre-Flight Inspection.

(6) Task 1024 – Perform Before Starting-Engine Through Before-Leaving Helicopter Checks.

(7) **Task 1028 – Perform Hover PWR Check**.

(8) **Task 1030 – Perform Hover Out-of-Ground Effect Check**.

(9) Task 1032 – Perform Radio Communications Procedures.

(10) **Task 1038 – Perform Hovering Flight**.

(11) **Task 1040 – Perform Visual Meteorological Conditions Takeoff**.

(12) **Task 1052 – Perform Visual Meteorological Conditions Flight Maneuvers**.

(13) **Task 1058 – Perform Visual Meteorological Conditions Approach**.

(14) **Task 1062 – Perform Slope Operations**.

(15) Task 1070 – Respond to Emergencies.

(16) **Task 1072 – Respond to Engine Failure at a Hover**.

(17) **Task 1074 – Respond to Engine Failure at Cruise Flight**.

(18) **Task 1184 – Respond to Inadvertent Instrument Meteorological Conditions**.

b. **Aircraft Series/Group Currency Requirements.** See Appendix B.

c. **NVG currency.**

(1) To be considered NVG current, an aviator will participate once every 60 consecutive days in at least a one-hour flight in the aircraft, from either PI station, while wearing NVG.

(2) At a minimum, a crewmember whose currency has lapsed must complete, a one-hour NVG proficiency evaluation given in the aircraft at night by an NVG IP or SP. Minimum tasks to be evaluated are listed below. To re-establish currency, an NVG IP may evaluate an NVG IP or SP. An IP may not evaluate an IP or SP for APART purposes.

(a) Task 1000 – Participate in a Crew Mission Briefing.

(b) Task 1022 – Perform Pre-Flight Inspection.

(c) Task 1024 – Perform Before Starting Engine Through Before Leaving Helicopter Checks.

(d) **Task 1028 – Perform Hover PWR Check**.

(e) **Task 1030 – Perform Hover Out-of-Ground Effect Check**.

(f) **Task 1038 – Perform Hovering Flight**.

(g) **Task 1040 – Perform Visual Meteorological Conditions Takeoff**.

(h) Task 1048 – Perform Fuel Management Procedures.

(i) **Task 1058 – Perform Visual Meteorological Conditions Approach**.

(j) **Task 1062 – Perform Slope Operations**.

(k) Task 1070 – Respond to Emergencies.

(l) **Task 1474 – Respond to Night Vision Goggle Failure**.

2-7. CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR TRAINING REQUIREMENTS. The commander evaluates the unit mission and determines if chemical, biological, radiological, and nuclear (CBRN) training is required. All FAC 1 and selected FAC 2 aviators will be trained IAW the commander's guide. Aviators must wear full mission-oriented protective posture-4 (MOPP-IV) gear during CBRN training.

CAUTION

While conducting CBRN training the commander will ensure that aircrews exercise caution when performing flight duties when the wet bulb globe temperature (TEMP) is above 75 degrees (°) Fahrenheit.

a. Aviators will receive CBRN training in the base tasks listed below and will perform at least one iteration annually. The commander may select mission/additional tasks based on the unit's mission.

(1) Task 1000 – Participate in a Crew Mission Briefing.

(2) Task 1022 – Perform Pre-Flight Inspection.

(3) Task1024 – Perform Before Starting Engine through Before Leaving Helicopter Checks.

(4) **Task 1028 – Perform Hover PWR Check**.

(5) **Task 1030 – Perform Hover Out-of-Ground Effect Check**.

(6) Task 1032 – Perform Radio Communications Procedures.

(7) **Task 1040 – Perform Visual Meteorological Conditions Takeoff**.

(8) **Task 1044 – Navigate by Pilotage and Dead Reckoning**.

(9) **TASK 1058 – Perform Visual Meteorological Conditions Approach**.

b. While conducting CBRN training, the commander will ensure that–

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

(2) Aircrews will not receive emergency procedures training in flight while wearing MOPP gear. (They will complete this training in a static aircraft.)

(3) CBRN training will be closely coordinated with the local flight surgeon.

2-8. NIGHT UNAIDED TRAINING REQUIREMENTS.

a. Annual night unaided training is mandatory for all aviators. The tasks listed in Table 2-2, page 2-3, will be evaluated during RL progression/refresher training and a minimum of one iteration of each task will be performed annually.

b. The commander may designate any night tasks for evaluation during the APART period.

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Chapter 3

Evaluation

This chapter describes evaluation principles and grading considerations. It also contains guidelines for conducting academic and hands-on performance testing. Evaluations are a primary means of assessing flight standardization and crewmember proficiency. Evaluations will be conducted IAW AR 95-1, the commander's ATP, TC 3-04.11 and this ATM.

3-1. EVALUATION PRINCIPLES. The value of any evaluation depends on adherence to fundamental evaluation principles. These principles are described below.

a. **Selection of evaluators.** The evaluators must be selected not only for their technical qualifications but also for their demonstrated performance, objectivity, and ability to observe and to provide constructive comments. These evaluators are the SPs, IPs, IEs, and MEs, who assist the commander in administering the ATP.

b. **Method of evaluation.** The method used to conduct the evaluation must be based on uniform and standard objectives. In addition, it must be consistent with the unit's mission and must strictly adhere to the appropriate standing operating procedures (SOPs) and regulations. The evaluator must ensure a complete evaluation is given in all areas and refrain from making a personal "area of expertise" a dominant topic during the evaluation.

c. **Participant understanding.** All participants must completely understand the purpose of the evaluation.

d. **Participant cooperation.** Cooperation by all participants is necessary to guarantee the accomplishment of the evaluation objectives. The emphasis is on all participants, not just on the examinee.

e. **Identification of training needs.** The evaluation must produce specific findings to identify training needs. The examinee needs to know what is being performed correctly or incorrectly, and how improvements can be made.

f. **Purpose of evaluation.** The evaluation will determine the examinee's ability to perform essential tasks to prescribed standards. Flight evaluations will also determine the examinee's ability to exercise crew coordination in completing these tasks.

g. **Crew coordination.** The guidelines for evaluating crew coordination are based on a subjective analysis of how effectively a crew performs together to accomplish a series of tasks. The evaluator must determine how effectively the examinee employs aircrew coordination as outlined in Chapter 6.

h. **Evaluator role as crewmember.** In all phases of evaluation, the evaluator is expected to perform as an effective crewmember. However, at some point during the evaluation, circumstances may prevent the evaluator from performing as a crewmember. In such cases, a realistic, meaningful, and planned method should be developed to pass this task back to the examinee effectively. During the conduct of the flight evaluation, the evaluator will normally perform as outlined in the task description or as directed by the examinee. At some point, the evaluator may perform a role reversal with the examinee. The examinee must be made aware of both the initiation and termination of roll reversals. The examinee must know when he is being supported by a fully functioning crewmember.

Note. When evaluating a PC, IP, SP, ME, IE or a UT, the evaluator must advise the examinee that, during role-reversal, he may deliberately perform some tasks or crew coordination outside the standards to check the examinee's diagnostic and corrective action skills.

3-2. GRADING CONSIDERATIONS.

a. **Academic evaluation**. The examinee must demonstrate a working knowledge and understanding of the appropriate subject areas.

b. **Flight evaluation**.

(1) Academic. Some tasks are identified in "Training and Evaluation Requirements" as tasks, which may be evaluated academically. For these tasks the examinee must demonstrate a working knowledge of the tasks. Evaluators may use computer-based instruction, mock-ups, or other approved devices to assist in determining the examinee's knowledge of the task.

(2) Aircraft. These tasks, require evaluation under these conditions, must be performed in the aircraft. Task standards are based on an ideal situation. Grading is based on meeting the minimum standards. The evaluator must consider deviations (high wind, turbulence, or poor visibility) from the ideal during the evaluation. If other than ideal conditions exist, the evaluator must make appropriate adjustments to the standards.

Note. Unless specified on the crewmembers task list, 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 modes of flight are listed as follows from LEAST to MOST demanding: (1) D, (2) NVG, (3) N, and (4) weather/H.

3-3. CREWMEMBER EVALUATION. Evaluations are conducted to determine the crewmember's ability to perform the tasks on the CTL and check understanding of required academic subjects listed in the ATM. When the examinee is an evaluator/trainer, the recommended procedure is for the evaluator to reverse roles with the examinee. When the evaluator uses this technique, the examinee must understand how the role-reversal will be conducted and when it will be in effect. Initial validation of an aviator's qualifications following a military occupational specialty producing course of instruction/school (for example, OH-58 IP course, MTP course and IEs course) will be conducted in the aircraft upon return from that course and in the aircraft at each new duty station. Commanders may forward a request for a commander's evaluation to be conducted concurrently with the end of course evaluation.

a. **Recommended performance and evaluation criteria**.

(1) PI. The PI must demonstrate a working knowledge of the appropriate academic subjects from paragraph 3-4b. In addition, the PI must be familiar with the individual aircrew training folder (IATF), and understand the requirements of the CTL.

(2) PC/MP. The PC/MP must meet the requirements in 3-3a (1). In addition, the PC/MP must demonstrate sound judgment, and technical/tactical proficiency in the employment of the aircraft, the unit's mission, the crew, and assets.

(3) UT. The UT must meet the requirements in a(2). In addition, the UT must be able to instruct in the appropriate tasks and subjects, recognize errors in performance or understanding, make recommendations for improvement, train to standards and document training.

(4) IP or IE. The IP must meet the requirements in a(2). In addition, the IP/IE must be able to objectively train, evaluate, and document performance of the PI, PC, and UT, using role-reversal for UT training, as appropriate. This individual must possess a thorough knowledge of the fundamentals of instruction and evaluation, be able to develop and implement an individual training plan and possess a thorough understanding of the requirements and administration of the ATP.

(5) SP. The SP must meet the requirements in paragraph a(2) and a(4). The SP must be able to instruct and evaluate IPs, SPs, UTs, PCs, as appropriate, using role-reversal. The SP must also be able to develop and implement a unit-training plan and administer the commander's ATP.

(6) ME. The ME must meet the requirements in paragraph a(1) and a(2). The ME must be able to instruct and evaluate other MEs and MPs using role reversal when required.

Note. SP/IP/IE/ME/UT will be evaluated on their ability to apply the learning and teaching process outlined in the instructor pilot handbook.

b. **Academic evaluation criteria**.

(1) PFEs. The commander or his or her representative will select appropriate topics to be evaluated from paragraph 3-4b that apply.

(2) APART standardization evaluation. The SP/IP will evaluate a minimum of two topics from each subject areas in paragraph 3-4b that apply.

(3) APART instrument evaluation. The IE or IP designated by the commander will evaluate a minimum of two topics from the subject areas in paragraphs 3-4b(1) through (3) relative to instrument meteorological conditions (IMC) flight.

(4) Annual NVG evaluation. The NVG SP/IP will evaluate a minimum of two topics from the subject areas in paragraph 3-4b that apply.

(5) APART MP/ME evaluation. The ME will evaluate a minimum of two topics from the subject areas in paragraphs 3-4b(1) through (4) and (8) with specific emphasis on how they apply to maintenance test flights.

(6) Other ATP evaluations. The SP/IP will evaluate a minimum of two topics from each subject area in paragraphs 3-4b that apply.

3-4. EVALUATION SEQUENCE. The evaluation sequence consists of four phases—Introduction, Academic Evaluation Topics, Flight Evaluation, and Debriefing. The evaluator will determine the amount of time devoted to each phase.

a. **Phase l-Introduction**. In this phase, the evaluator will—

(1) Review the examinee's individual flight records folder (IFRF) and IATF records to verify that the examinee meets all prerequisites for designation and has a current DA Form 4186 (Medical Recommendation for Flying Duty).

(2) Confirm the purpose of the evaluation, explains the evaluation procedure, and discusses the evaluation standards and criteria to be used.

Note. If the evaluation is for an evaluator, the individual conducting the evaluation must explain that he or she will evaluate the examinee's ability to apply the learning and teaching process outlined in the instructor pilot handbook.

Note. For UT's, 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-Academic Evaluation Topics**.

(1) Regulations and publications (AR 40-8 [Temporary Flying Restrictions to Exogenous Factors], AR 95-1, AR 95-2 [Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigational Aids], DA Pamphlet [DA Pam] 738-751, Department of Defense flight information publications [DOD FLIP], Federal Aviation regulations [FARs], TC 3-04.11, technical manual [TM] 55-1520-228-10, TH-67 operators supplement and local and unit SOPs and regulations). Topics in this subject area are–

- ATP/CTL requirements.
- Crew coordination.
- Airspace regulations and usage.
- Flight plan preparation and filing.

- Performance planning.
- Inadvertent instrument meteorological conditions (IIMC) procedures.
- Forms, records, and publications required in the aircraft.
- Unit SOP and local requirements.
- DOD FLIP and maps.
- Visual flight rules (VFR)/IFR minimums and procedures.
- Weight and balance requirements.
- Maintenance forms and records.
- Aviation life support equipment (ALSE).

(2) Operating limitations and restrictions (TM 55-1520-228-10 and TH-67 operator's supplement). Topics in this subject area are–

- Wind limitations.
- Weight and balance limitations/restrictions.
- PWR limitations.
- Engine limitations.
- Weather limitations.
- Pressure limitations.
- Airspeed limitations.
- Temperature limitations.
- Flight envelope limitations.
- Aircraft systems limitations
- Performance chart interpretation.
- Airworthiness release (AWR) restrictions (as applicable).

(3) Aircraft emergency procedures and malfunctions analysis (TM 55-1520-228-10 and TH-67 operator's supplement). Topics in this subject area are—

- Definition of emergency terms.
- Engines malfunction(s) and restart procedures.
- Rotor, transmission, and drive systems.
- Tail rotor malfunctions.
- Chip detectors.
- Fires and hot starts.
- Smoke and fume elimination.
- Hydraulic system malfunction.
- Fuel system malfunction.
- Electrical system malfunctions.
- Caution and warning emergency procedures.
- Landing and ditching procedures.

- Flight control malfunctions.

(4) Aerodynamics (field manual [FM] 3-04.203, TM 55-1520-228-10, and TH-67 operator's supplement). Topics in this subject area are—

- Loss of tail rotor effectiveness.
- Dynamic rollover.
- Settling with PWR.
- Airfoil terminology.*
- Airflow during hover (HVR).*
- Dissymmetry of lift. *

Note. * Denotes IP/SP only.

(5) Mission operations (FM 3-04.203 [Fundamentals of Flight], DOD FLIP and unit SOP, flight information handbook [FIH], air tasking order [ATO], air control order [ACO], identification friend or foe [IFF], selective identification feature). Topics in this subject area are—

- Hazards to terrain flight safety
- Tactical flight mission planning.
- Interpretation of navigational charts (maps).

(6) Night mission operations (TM 55-1520-228-10, TH-67 operator's supplement, TM 11-5855-263-10, FM 3-04.203, and FM 3-04.301). Topics in this subject area are—

- Night vision limitations and techniques.
- Types of vision.
- Visual illusions.
- Use of lights (internal and external).
- Distance estimation and depth perception.
- Dark adaptation, night vision protection, and night blind spot.
- Aircrew night and NVG requirements.
- NVG operational considerations/characteristics.

(7) Aeromedical (AR 40-8 and FM 3-04.93). Topics in this subject area are—

- Spatial disorientation.
- Middle ear discomfort.
- Stress and fatigue.

(8) Instructor fundamentals (IP/SP/IE/ME only). Topics in this subject area are—

- The learning process.
- The teaching process.
- Teaching methods (development).
- Evaluation (oral quizzing).
- Normal/abnormal psychological response to stress.

(9) MTP (TM 55-1520-228-23, TM 1-1520-228-MTF, TM 1-2840-228-23, and TH-67 MTF manual).

- Engine start.
- Instrument indications.
- Electrical system.
- Warning, caution, and advisory indications.
- PWR plant.
- Engine performance check.
- PWR train.
- Fuel system.
- Hydraulic system.
- Flight controls.
- Rotor smoothing.
- Mission equipment.
- Communication and navigation equipment.
- Maintenance operational check requirements.
- Maintenance test flight requirements.
- Maintenance test flight forms and records.
- Test flight weather requirements.

c. **Phase 3-Flight Evaluation.** This phase consists of a crew briefing; a pre-flight inspection; engine-start, run-up, and HVR 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 to be evaluated. When evaluating an evaluator, the individual conducting the evaluation must advise the examinee that he may deliberately perform some tasks not IAW 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, at a minimum, the items listed below.

(a) Mission.

(b) Weather.

(c) Flight route.

(d) Performance data.

(e) Transfer of flight controls.

(f) Crew duties, to include emergency duties.

(g) Procedures for conducting simulated emergencies.

(h) Post-crash rendezvous point.

Note. Refer to TM 1-1520-228-10, TH-67 operator's supplement, and local directives for additional crew briefing requirements.

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(2) For pre-flight and before leaving helicopter checks, the evaluator will evaluate the examinee's use of TM 1-1520-228-10/CL, TM 1-1520-228-MTF, or TH 67 operators supplement/CL. For engine start through shutdown checks, the evaluator will evaluate the examinee's use of TM 1-1520-228-CL, TM 1-1520-228-MTF, or TH 67 operator supplement/CL. The evaluator also will have the examinee properly identify at least two aircraft components and discuss their functions.

(3) Flight tasks. At a minimum, the evaluator will evaluate those tasks identified in Chapter 2 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 must demonstrate an ability to evaluate and instruct appropriate flight tasks. When used as part of the PFE, the evaluation may include an orientation of the local area, checkpoints, weather, and other pertinent information. All MTF tasks are mandatory for an MTF standardization evaluation.

d. **Phase 4-Debriefing.** During this phase, the evaluator will—

(1) Discuss, with the examinee, the examinee's strengths and weaknesses.

(2) Offer the examinee recommendations for improvement.

(3) Tell the examinee whether he passed or failed the evaluation and discuss any tasks not performed to standards.

(4) Inform the examinee of any restrictions, limitations, or revocations the evaluator will recommend to the commander following an unsatisfactory evaluation.

(5) Complete the applicable DA forms per instructions in TC 3-04.11 and ensure the examinee reviews and initials the appropriate forms.

3-5. STANDARDIZATION/INSTRUMENT/ANNUAL NVG FLIGHT EVALUATION. This evaluation is conducted IAW TC 3-04.11, this manual, and the commander's task list. After the evaluation, the IP or SP will debrief the examinee and complete the applicable forms IAW TC 3-04.11.

3-6. PROFICIENCY FLIGHT EVALUATION. This evaluation is conducted IAW AR 95-1 and this manual. After the evaluation, the IP or SP will debrief the examinee and complete the applicable forms IAW TC 3-04.11.

3-7. POST-ACCIDENT FLIGHT EVALUATION. This evaluation is required by AR 95-1. After the evaluation, the IP or SP will debrief the examinee and complete the applicable forms IAW TC 3-04.11.

3-8. MEDICAL FLIGHT EVALUATION. This evaluation is conducted IAW AR 95-1. The IP or SP, on the recommendation of the flight surgeon, will require the examinee to perform a series of tasks most affected by the examinee's disability. The evaluation should measure the examinee's potential to perform ATM tasks despite a 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—

(l) A description of the environmental conditions under which the evaluation was conducted (for example, day, night, or overcast).

(2) A list of tasks performed during the evaluation.

(3) A general statement of the individual's ability to perform with the disability and the conditions under which he can perform.

b. The unit commander will then forward the memorandum and the applicable forms to: Commander, USAACE, ATTN: HSXY-AER, Fort Rucker, AL 36362-5333.

3-9. NO-NOTICE EVALUATION. This evaluation is conducted per TC 3-04.11. After the evaluation, the evaluator will debrief the examinee and complete the applicable forms IAW TC 3-04.11.

3-10. COMMANDER'S EVALUATION. This evaluation is conducted per TC 3-04.11. After the evaluation, the evaluator will debrief the examinee and complete the applicable forms IAW TC 3-04.11.

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Chapter 4

Crewmember Tasks

This chapter implements portions of STANAG 3114.

This chapter describes the task, maneuvers and procedures that are essential for maintaining crewmember skills. It defines the task title, number, conditions and standards by which performance is measured. A description of crew actions, along with the training and evaluation requirements is also provided. It does not contain all the maneuvers that can be performed in the aircraft.

4-1. TASK CONTENTS.

a. **Task number.** Each ATM task is identified by a 10-digit system approach to training number and a title which corresponds to the tasks listed in tables 2-2 through 2-4, pages 2-3 to 2-5. The first three digits of each task in this ATM are 011 (U.S Army Aviation School) and 961 (WAATS [NGB]); the second three digits are OH-58/TH-67 specific. For convenience, only the last four digits are listed in this training circular. The last four digits are as follows–

- Base tasks are assigned 1000-series numbers.
- Mission tasks are assigned 2000-series numbers.
- Additional tasks are assigned 3000-series numbers.
- Maintenance tasks are assigned 4000-series numbers.

Note. The commander will develop the tasks, conditions, standards, and descriptions for 3000-series tasks. An information copy of each additional task will be forwarded to: Director, Directorate of Evaluation and Standardization, ATZQ-ES, (OH-58 Branch), Building 4503, Kingsman Avenue, Fort Rucker, AL 36362-5263, for review.

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b. **Task title.** The task title identifies a clearly defined and measurable activity. Titles may be the same in several ATMs, but tasks may be written differently for the specific airframe.

c. **Conditions.** The conditions specify the situation in which the task will be performed. They describe the important aspects of the performance environment. References to OH-58 helicopters apply to all OH-58A/C design helicopters. Unless specified otherwise, all references to the TH-67 helicopter apply to all TH-67 series helicopters (A+, VFR, and IFR). Reference will be made to a particular helicopter within a design series when necessary. All conditions must be met before task iterations can be credited.

(1) Common conditions are—

(a) In a mission aircraft with mission equipment and crew, items required by AR 95-1 and required publications (operator's manual, checklist (CL), navigational and terrain maps).

(b) Under VMC, IMC or simulated IMC, Day, night, and NVD employment.

(c) In any terrain or climate.

(d) In a CBRN environment with mission protective posture equipment used.

(e) In an electromagnetic environment.

(2) Common training/evaluation conditions are—

(a) When a UT, IP, SP, IE or ME is required for the training of the task, then that individual will be at one set of the flight controls while the training is performed. References to IP in the task conditions include SP.

(b) These tasks are required for the IPs and SPs for training/evaluation in the aircraft. IPs/SPs are prohibited from performing these tasks when conducting single pilot operations.

- **Task 1072 – Respond to Engine Failure at a Hover**.
- **Task 1074 – Respond to Engine Failure at Cruise Flight**.
- **Task1076 – Respond to Hydraulic System Malfunction**.
- **Task 1082 – Perform Autorotation**.
- **Task 1321 – Perform Anti-Torque Malfunction**.
- **Task 1323 – Perform Hovering Autorotation**.
- **Task 1327 – Perform Low-Level Autorotation**.
- **Task 1333 – Perform Low-Level/Low-Airspeed Autorotation**.
- **Task 1335 – Perform Autorotation with Turn**.

(c) The following task requires an IP/SP or IE for training and evaluation in the aircraft at a set of flight controls. IPs/SPs/IEs are prohibited from performing this task when conducting single pilot operations.

- **Task 1182 – Perform Unusual Attitude Recovery**.

(3) Unless otherwise specified in the conditions, all in-flight training and evaluation will be conducted under visual meteorological conditions (VMC). Simulated IMC denote flight solely by reference to flight instruments.

(4) Tasks requiring specialized equipment do not apply to aircraft that do not have the equipment installed.

(5) NVG use may be a condition for any flight task, unless otherwise noted. When NVG are listed as a condition, task standards will be the same as those described for performance of the task without using NVG.

d. **Standards**. The standards describe the minimum degree of proficiency or standard of performance to which the task must be accomplished. The terms "without error", "properly", and "correctly" apply to all standards. The standards are based on ideal conditions. Task descriptions may contain required elements for satisfactory completion of a given task. Crew actions specified in the description are required to satisfactorily perform crew coordination. Some standards are common to several tasks. The following common standards apply to all tasks—

Note. It is essential for the PC to ensure specific duties are briefed before entering the aircraft. The ability for either crewmember to perform most aircraft/system functions breaks down the standard delineation of duties. This could mean that during an unforeseen event, one crewmember might attempt to resolve the situation on their own, rather than seeking assistance from the other crewmember.

(1) All tasks.

(a) Perform crew coordination actions IAW Chapter 6 and the task description.

(b) Apply appropriate environmental considerations.

(c) Do not exceed aircraft limitations.

(d) Use -10/CL, operator's supplement/supplement CL IAW 95-1 and this manual.

(2) All tasks with the engine operating.

(a) Maintain airspace surveillance (Task 1026).

(b) The P* will announce intent to perform a specific maneuver or aircraft movement.

(3) HVR.

(a) Maintain heading plus or minus (±) 10 degrees.

(b) Maintain HVR altitude ±1 foot (±10 feet for OGE).

(c) Do not allow drift to exceed ±1 foot (±10 feet OGE) with minimum drift at touchdown.

(d) Maintain a constant rate of movement appropriate for existing conditions.

(e) Maintain a constant turn rate, not to exceed 90 degrees in 4 seconds.

(f) Maintain position over pivot point ±2 feet (±10 feet OGE).

(g) Make smooth and controlled ascents and descents to/from the ground.

(h) Ensure rates of descent do not exceed 300 feet per minute (FPM).

(4) In-flight.

(a) Properly clear the aircraft and inform other crew member of all traffic, targets or obstacles that pose a threat to safe aircraft operations.

(b) Maintain aircraft in trim.

(c) Maintain selected airspeed ±10 knots indicated airspeed (KIAS).

(d) Maintain selected angle of bank ±10 degrees.

(e) Maintain selected altitude ±100 feet.

(f) Roll out on desired heading ±10 degrees.

(g) Maintain rate of climb (R/C)/descent ±100 feet.

(5) Takeoff/approaches.

(a) Perform an area reconnaissance of the landing/departure area.

(b) Establish the proper altitude/flight path to clear obstacles.

(c) Establish airspeed ±10 knots.

(d) Maintain ground track alignment with the landing/departure direction, as appropriate, with minimum drift.

(e) Maintain aircraft trim above 50 feet above ground level (AGL) and align the aircraft with takeoff/landing direction at/or below 50 feet AGL.

(f) Maintain the appropriate angle and speed necessary for the conditions.

(g) Perform a smooth and controlled termination to a HVR or to the ground at the intended point of touchdown.

e. **Description**. The description explains the preferred method for accomplishing the task to meet the standards. This manual cannot address all situations and alternate procedures may be required. Tasks may be accomplished using other techniques, as long as the task is done safely and the standards are met; however, attention to the use of the words, will, should, shall, must, or may throughout the text of a task description is crucial. These actions apply in all modes of flight during day, night, IMC or simulated IMC, NVG or CBRN operations. When specific crew actions are required, the task will be broken down into crew actions and procedures as follows:

(1) Crew actions. These define the portions of a task performed by each crewmember to ensure safe, efficient, and effective task execution. The designations P* (pilot on the controls), P (pilot not on the controls), do not refer to PC (pilot in command) duties. When required, PC responsibilities are specified. For all tasks, the following responsibilities apply:

(a) Both crewmembers. Perform crew coordination actions and announce malfunctions or emergency conditions monitor engine/systems operations, and avionics (navigation and communication), as necessary. During VMC, focus attention primarily outside the aircraft, maintain airspace surveillance, and clear the aircraft. Provide timely warning of traffic and obstacles by announcing the type of hazard, direction, distance, and altitude. Crewmembers also announce when attention is focused inside the aircraft (except for momentary scans for example, during crosschecks) and when attention is focused back outside. Chapter 6 contains examples of crew callouts and guidance on cockpit coordination.

(b) PC. The PC is responsible for the conduct of the mission, and for operating, securing, and servicing the aircraft he commands. The PC will ensure that a crew briefing is accomplished and that the mission is performed IAW air traffic control (ATC) instructions, regulations, and SOP requirements.

(c) PI. The PI is responsible for completing tasks as assigned by the PC.

(d) P*. The P* is responsible for aircraft control, obstacle avoidance, and the proper execution of emergency procedures. The P* will announce any deviation from instructions issued. The P* will announce changes in altitude, attitude, airspeed, or direction.

(e) P. The P is responsible for navigation, in-flight computations, and assisting the P* as requested. When duties permit, assist the P* with obstacle avoidance.

(f) The trainer/evaluator. When acting as PI during training and evaluations, the trainer/evaluator will act as a functioning crewmember and perform as required, unless he is training or evaluating crewmember response to an ineffective crewmember. In the aircraft, this individual will ensure safe landing areas are available for engine failure training and that aircraft limits are not exceeded.

(g) Additional crew actions. The tasks specify additional crew actions, if any, necessary to successfully accomplish the task.

(2) Procedures. This section explains the portions of a task that an individual or crew accomplishes. The procedures are an important element in standardization and training; however, they should not be construed to be the grading standard, but rather a means to meet the standard. Procedures are flexible enough to allow the P* to use judgment for minor deviations as long as the standards are met.

f. **Considerations**. This section defines considerations for task accomplishment under various conditions (for example, night or NVG, or snow/sand/dust). The inclusion of environmental considerations in a task does not relieve the commander of the requirement for developing an environmental training program IAW TC 3-04.11. Common night/NVG considerations are listed below and will be applied to tasks conducted in night/NVG environments. Additional considerations specific to a task will be listed in the task. Training considerations establish specific actions and standards used in the training environment.

(1) Night and NVG.

(a) Artificial lighting:

- Prior to conducting a task/maneuver, determine the need and use of artificial lighting.
- Ensure lighting is on before descending below obstacles (if necessary).
- Altitudes and ground speeds are difficult to detect and use of artificial illumination may sometimes be necessary.
- Adjust for best angle without causing excessive reflection into cockpit.
- IIMC may induce spatial disorientation with artificial lighting.

(b) Treat visual obstacles, such as shadows, the same as physical obstacles.

(c) Cockpit switches/knobs will be more difficult to identify. Identify and confirm switches and knobs.

(d) Using proper scanning techniques:

- Wires and other hazards are difficult to detect with or without NVG.
- The crew must use proper scanning techniques to ensure obstacle avoidance.
- To avoid becoming spatially disoriented.

(e) Clear communications (COMM) are required at night so both crewmembers know and understand what the other is doing.

(f) With reduced visibilities, night conditions or under NVG, more detailed flight planning and map preparation is required. FM 3-04.203 contains details on night/NVG navigation.

(g) The P should make all internal checks (for example, computations and frequency changes).

(h) Use of white lights or weapons flashes can impair night vision or degrade NVG capabilities.

(i) The crew shall announce when attention is focused inside or outside the cockpit.

(2) Night. If possible, crews should allow time for proper dark adaption.

(a) Adjust altitudes and airspeeds until dark adapted.

(b) Dimly visible objects may disappear when viewed directly and should be viewed in the peripheral.

(3) NVG.

(a) NVG degrade distance estimation and depth perception.

(b) Aircraft in flight may appear closer than they actually are due to amplification of navigation lights.

(c) A thorough crew briefing shall be conducted prior to NVG operations. Transfer of controls shall be covered in detail.

(4) Snow/tundra/muskeg/dust/mud.

(a) FM 3-04.203 outlines procedures for reducing hazards associated with the loss of visual references during takeoff or landing due to blowing snow, sand or dust (or any other obscuration).

(b) Ensure all rotating components and inlets/exhausts are clear of ice and/or snow prior to starting engine.

(c) At night, use of the searchlight may cause spatial disorientation while in blowing snow/sand/dust.

(d) Consider the effects of the snow/sand/dust cloud on personnel and equipment in/around the landing area.

(e) In some cases, applying collective to blow away loose snow/sand/dust from around the aircraft is beneficial before performing maneuvers.

(f) The P* should be prepared to transition to instruments if ground reference is lost.

(g) Before performing operations in a mud/muskeg/tundra environment, it is important to understand dynamic rollover characteristics.

(h) Flight over areas of limited contrast, especially at night, is characterized by a lack of visual cues and therefore, has the potential of causing visual illusions. Be alert to any unannounced changes in the flight profile and be prepared to take immediate corrective actions. The radar altimeter low altitude warning may used to assist in altitude control. Hazards to terrain flight (for example, harbor lights, buoys, wires, and birds) must also be considered during overwater flight.

(i) When landing in deep snow, the aircraft skids may settle at different rates and the aircraft will normally terminate in a tail low attitude.

(j) Hovering OGE reduces AVAIL ground references and may increase the possibility of spatial disorientation. Be prepared to transition to instruments and execute an instrument takeoff if ground reference is lost.

(k) Slowly increase the collective until the crew confirms that the landing gear is free.

(l) Approaches:

- Termination to an OGE HVR. Terminate to a stationary OGE HVR over the touchdown area. This approach requires OGE PWR and may be used for most snow landings and some sand/dust landings. Slowly lower the collective and allow the aircraft to descend. The descent may be vertical or with forward movement. The rate of descent will be determined by the rate in which the snow/sand/dust is blown from the intended landing point. During the descent, remain above the snow/sand/dust cloud until it dissipates and the touchdown point can be seen. Both crewmembers should be focused outside the cockpit. Be prepared to execute a takeoff.
- Termination to a 10-foot HVR. Select a suitable area and terminate the approach to a 10-foot HVR over the intended touchdown point. Begin a vertical descent until the aircraft touches down. Check aircraft stability while lowering the collective. If the area is suitable, lower the collective to the full down position and neutralize the cyclic and pedals.
- Termination to the surface with forward speed. This termination may be made to an improved landing surface or suitable area with minimal ground references. Once the appropriate approach angle is intercepted, adjust the collective as necessary to establish and maintain the angle. As the apparent rate of closure appears to increase, progressively reduce the rate of descent and closure to arrive at the touchdown area slightly above effective translational lift. Maintain the minimum rate of closure that ensures that the snow/sand/dust cloud remains behind the pilot's station. When the skids contact the snow/ground, lower the collective and allow the aircraft to settle. Apply slight aft cyclic at touchdown to prevent snagging the skid toes. The P should keep the P* informed of the location of the snow/sand/dust cloud. Be prepared to execute a go round.
- Termination to the surface with little or no forward speed. This termination should be made to landing areas where slopes, obstacles, or unfamiliar terrain preclude a landing with forward speed. It is not recommended when new or powder snow or fine dust is present because whiteout/brownout conditions may occur. The termination is made directly to a reference point on the ground with no forward speed. The P should keep the P* informed of the location of the snow/sand/dust cloud. Be prepared to execute a go round.

g. **Training and evaluation requirements**. Training and evaluation requirements define whether the task will be trained or evaluated in the aircraft or academic environment. Training and evaluations will be conducted only in the listed environments, but may be done in any or all combinations. Listing aircraft under evaluation requirements does not preclude the IP from evaluating elements of the task academically to determine depth of understanding or planning processes. The evaluation must include hands-on performance of the task. Table 2-4, page 2-7, lists the modes of flight in which the task must be evaluated. The commander may also select crew and/or additional tasks for evaluation.

h. References. The references are sources of information relating to that particular task. Many references are common to several tasks. Unless otherwise specified in the individual task, the references below apply. Alternate or additional references will be listed in individual tasks.

(1) All flight tasks (with engine operating).

(a) AR 95-1.

(b) FM 3-04.203.

(c) FM 1-230.

(d) TM 55-1520-228-10, Operators Manual: OH-58A/C Helicopter.

(e) TM 1-1520-228-CL: OH-58A/C Helicopter.

(f) TM 1-1520-228-MTF Manual: OH-58A/C Helicopter.

(g) TH-67 Operators Supplement.

(h) TH-67 Operators Supplement CL.

(i) TH-67 Operators Supplement MTF CL.

(j) DOD FLIP.

(k) Title 14 CFR/host country regulations.

(l) Unit/local SOPs.

(m) Aircraft logbook.

(2) All instrument tasks.

(a) AR 95-1.

(b) FM 3-04.240.

(c) DOD FLIP.

(d) Aeronautical Information Manual (AIM).

(e) FIH.

(3) All tasks with environmental considerations.

(a) FM 3-04.203.

(b) TC 3-04.93.

(4) All tasks used in a tactical situation.

(a) FM 3-04.203.

(b) FM 3-04.126.

(c) FM 3-25.26.

(d) FM 17-95.

(e) FM 3-04.140.

(f) ATTP 3-18.12.

4-2. TASKS.

a. Standards versus descriptions. Descriptions contain preferred elements for satisfactory completion of a given task. Crew actions specified in the description are required to satisfactorily perform crew coordination. Attention to the use of the words, will, should, shall, must, or may throughout the text of a task description is crucial. The description explains one or more recommended techniques for accomplishing the task to meet the standards.

b. Critical tasks list. The following numbered tasks are OH-58A/C and/or TH-67 crewmember critical tasks.

TASK 1000

Participate in a Crew Mission Briefing

CONDITIONS: Prior to flight in an OH-58A/C or in a TH-67 helicopter; given DA Form 5484 (Mission Schedule/Brief) and a unit-approved crew briefing CL. DA Form 5484 is prescribed by AR 95-1.

STANDARDS: Apply appropriate common standards and the following additions/modifications:

1. The air mission commander (AMC) or PC will actively participate in the task and acknowledge an understanding of DA Form 5484 IAW AR 95-1.

2. The PC will conduct or supervise an aircrew mission briefing using a unit-approved crew briefing CL.

3. The crewmember receiving the crew/mission brief will verbally acknowledge a complete understanding of the crew/mission briefing.

DESCRIPTION:

1. Crew actions.

   a. A designated briefing officer will evaluate and brief key areas of the mission to the PC in accordance with AR 95-1. The PC will acknowledge a complete understanding of the mission brief and initial DA Form 5484.

   b. The PC has overall responsibility for the crew mission briefing. The PC will ensure that the pilot is current and qualified to perform the mission. The PC may direct the other crewmember to perform all or part of the crew briefing.

   c. The crewmember being briefed will address any questions to the briefer and will acknowledge that the crewmember understands the assigned actions, duties, and responsibilities. Lessons learned from previous debriefings should be addressed as applicable during the crew briefing.

2. Procedures. The PC will ensure that a crew briefing (DA Form 5484) is completed by a designated briefing officer prior to the mission/flight. Figure 4-1, page 4-10, depicts a suggested format for a crew briefing CL. Identify mission and flight requirements that will demand effective communication and proper sequencing and timing of actions by the crewmembers.

CREW BRIEFING CHECKLIST

1. Mission overview.
2. Flight route.
3. Weather. Departure, en route, destination, and void time.
4. Required items, mission equipment, and personnel.
5. Analysis of the aircraft.
   a. Logbook and pre-flight deficiencies.
   b. Performance planning.
   c. Mission deviations required based on aircraft analysis.
6. Crew actions, duties, and responsibilities.
   a. Transfer of flight controls and two challenge rule (P*).
   b. Assign scan sectors.
   c. Emergency actions.
      (1) Mission considerations.
      (2) IIMC.
      (3) Egress procedures and rendezvous point.
      (4) Actions to be performed by P* and P.
      (5) NVG failure.
   d. Crew coordination elements.
7. General crew duties.
   a. Pilot on the Controls (P*).
      (1) Fly the aircraft - primary focus outside when VMC, inside when IMC.
      (2) Avoid traffic and obstacles.
      (3) Cross-check systems and instruments.
      (4) Monitor/transmit on radios as directed by the PC.
   b. Pilot not on the controls (P).
      (1) Assist in traffic and obstacle avoidance.
      (2) Tune radios and set transponder.
      (3) Navigate.
      (4) Copy clearances, automatic terminal information service (ATIS), and other information.
      (5) Cross-check systems and instruments.
      (6) Monitor/transmit on radios as directed by the PC.
      (7) Read and complete CL items as required.
      (8) Set/adjust switches and systems as required.
      (9) Announce when focused inside for more than 2 to 3 seconds (VMC).
8. Risk assessment considerations.
9. Crewmembers' questions, comments, and acknowledgment of mission briefing.

Figure 4-1. Suggested format of a crew mission briefing checklist

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

REFERENCES: Appropriate common references.

TASK 1004

Plan a Visual Flight Rules Flight

CONDITIONS: Prior to VFR flight in an OH-58A/C or in a TH-67 helicopter, in a classroom environment, and given access to weather information; notices to airmen (NOTAMs); flight planning aids; necessary charts, maps, forms, publications; and weight and balance information.

STANDARDS: Apply appropriate common standards and the following:

1. Determine if the aircrew and aircraft are capable of completing the assigned mission.
2. Determine if the flight can be performed under VFR IAW AR 95-1, applicable FAR, host nation regulations, local regulations and SOPs.
3. Determine the correct departure, en route and destination procedures.
4. Select route(s) and altitudes that avoid hazardous weather conditions; do not exceed aircraft or equipment limitations and conform to VFR cruising altitudes IAW DOD FLIP.
5. For cross-country flights, determine the distance ±1 nautical mile (NM), true airspeed (TAS) ±5 knots, ground speed ±5 knots, and estimated time en route (ETE) ±3 minutes for each leg of the flight. Compute magnetic heading(s) ±5 (degrees).
6. Determine the fuel required IAW AR 95-1, OH-58A/C: ±25 pounds (lbs), TH-67: ±3.7 gallons (gals).
7. Verify the aircraft will remain within WT and center of gravity (CG) limitations for the duration of the flight IAW the operator's manual.
8. Verify aircraft performance data and ensure PWR is AVAIL to complete the mission IAW the appropriate operator's manual/supplement.
9. Complete and file the flight plan IAW AR 95-1 and DOD FLIP.
10. Perform mission risk assessment IAW unit SOP.

DESCRIPTION:

1. Crew actions.

   a. The PC will ensure that the PI is current and qualified to perform the mission, and the aircraft is equipped to accomplish the assigned mission. The PC may direct the PI to complete portions of the VFR flight planning.

   b. The PI will complete all assigned elements and report the results to the PC.

2. Procedures.

   a. Using appropriate military, Federal Aviation Administration (FAA), or host country weather facilities, obtain information about the weather. After ensuring that the flight can be completed under VFR, check NOTAMs, chart updating manuals (CHUMs) and other appropriate sources for restrictions that apply to the flight. Obtain navigational charts covering the entire flight area and allow for changes in route that may be required because of weather or terrain.

   b. Select the course(s) and altitude(s) that will best facilitate mission accomplishment.

   c. Using a central processing unit (CPU)-26A/P computer/Weems plotter (or equivalent) or air mission planning system to determine the magnetic heading, ground speed and ETE for each leg. Compute total distance and flight time, and calculate the required fuel using the appropriate charts in TM 55-1520-228-10 or the TH-67 operator's supplement. Determine if the duplicate weight and balance forms in the aircraft logbook apply to the aircraft configuration IAW AR 95-1. Verify that the aircraft WT and CG will remain within allowable limits for the entire flight. Complete the flight plan and file it with the appropriate agency.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common consideration.
2. Checkpoints used during the day may not be suitable for night/NVG.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

REFERENCES: Appropriate common references**.**

TASK 1006

Plan an Instrument Flight Rules Flight

CONDITIONS: Prior to IFR flight in an OH-58A/C or in a TH-67 helicopter, given access to weather information; NOTAMs; flight planning aids; necessary charts, forms, publications; and weight and balance information.

STANDARDS: Appropriate common standards and the following additions/modifications.

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

2. Determine if the flight can be performed under IFR IAW AR 95-1 and applicable FAR, host nation regulations, local regulations and SOPs.

3. Determine the proper departure, en route, and destination procedures.

4. Select route(s) and altitudes that avoid hazardous weather conditions, do not exceed aircraft or equipment limitations, and conform to IFR cruising altitudes IAW DOD FLIP or Air Mission Planning System (AMPS) video map terminal.

5. If off airway, determine the course(s) ±5.

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

7. Determine distance ±1 NM, TAS ±5 knots, ground speed ±5 knots, and ETE ±1 minutes for each leg of the flight.

8. Determine the fuel required IAW AR 95-1 and FM 3-04.240; OH-58A/C ±25 lb; TH-67 ±3.7 gal.

9. Verify aircraft performance data and ensure PWR is AVAIL to complete the mission IAW the appropriate the operator's manual/supplement.

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

11. Perform mission risk assessment IAW unit SOP.

*12. Verify the aircraft will remain within WT and center of gravity (CG) limitations for the duration of the flight IAW the operator's manual.

DESCRIPTION:

1. Crew actions. The PC may direct the PI to complete elements of the IFR flight plan and report the results.

2. Procedures.

   a. Using appropriate military, FAA, or host-nation weather facilities, obtain information about the weather. Compare destination forecast and approach minimums, and determine if an alternate airfield is required. Ensure that the flight can be completed IAW AR 95-1. Check the NOTAMs and other appropriate sources for restrictions that apply to the flight. Obtain navigation charts covering the entire flight area or the AMPS video map terminal, and allow for changes in routing or destination that may be required because of the weather.

   b. Select the route(s) or course(s) and altitude(s) that will best accomplish the mission.

   c. When possible, select preferred routing. Determine the magnetic heading, ground speed, and ETE for each leg, to include flight to the alternate airfield if required. Compute the total distance and flight time. Calculate the required fuel using a CPU-26A/P computer/Weems plotter (or equivalent) or approved mission planning software. Complete and file the flight plan with the appropriate agency.

> ***Note.*** Crews should consider and plan to use global positioning system (GPS) as an emergency backup system only. FAA-approved IFR GPS possess specific non-corruptible terminal instrument procedure data that cannot be altered by the aircrew.

Note. Crewmembers must be proficient in using all IFR navigation equipment installed in the aircraft they are operating (such as distance measuring equipment [DME], tactical air navigation [TACAN]). The proper use may include operating capabilities and restrictions that must be considered during the flight planning process.

NIGHT CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

REFERENCES: Appropriate common references.

TASK 1010

Prepare a Performance Planning Card

CONDITIONS: Given a completed Department of Defense (DD) Form 365-4 (Weight and Balance Form F-Transport/Tactical); TM-55-1520-228-10 or TH-67 operator's supplement; environmental conditions at takeoff, en route, and landing; and a blank performance planning card (PPC).

STANDARD: Complete the PPC IAW procedures given in TM-55-1520-228-10 or the TH-67 operator's supplement, current AWR instructions, approved aviation and missile command (AMCOM) performance planning software or the description below.

> ***Note.*** A significant increase is defined an increase of 5° or greater Celsius (C), 500 feet or greater pressure altitude (PA), or 100 lb or greater increase in aircraft gross weight (GWT).

DESCRIPTION:

1. Crew actions/procedures:

   a. The PC will verify and have AVAIL aircraft performance data necessary to complete the mission. The PC must ensure that aircraft limitations and capabilities will not be exceeded.

   b. The PI will assist the PC as directed.

   c. Use of DA Form 5701-228 (OH-58 A/C and TH-67 Performance Planning Card) (figure 4-2, page 4-16) is mandatory to organize performance planning data required for the mission. This is the only authorized OH-58A/C and TH-67 PPC.

OH-58A/C AND TH-67 PERFORMANCE PLANNING CARD

For use of this form, see TC 3-04.43; the proponent agency is TRADOC.

HOVER DATA

AIRCRAFT GWT				FUEL			
1 lbs				2/3 lbs/gal			
PA CUR	PA MAX	FAT CUR	FAT MAX	LOAD AVAIL CUR PA/FAT			
4a	4b	5a	5b	IGE 6a		OGE 6b	
				LOAD AVAIL MAX PA/FAT			
				IGE 6c		OGE 6d	
MAX TORQUE AVAIL (CURR/MAX)				7a %		7b %	
CONT TORQUE AVAIL (CURR/MAX)				8a %		8b %	
HOVER IGE TORQUE (CURR/MAX)				9a %		9b %	
HOVER OGE TORQUE (CURR/MAX)				10a %		10b %	
MAX ALLOW GWT IGE (CURR/MAX)				11a %		11b %	
MAX ALLOW GWT OGI (CURR/MAX)				12a %		12b %	
SAFE PEDAL MARGIN				YES ☑		NO ☐	

CRUISE DATA

ALT		FAT (C)		GWT		VNE	
15		16		14		17 IAS	
IAS 18		TAS 19		FUEL 20		TORQUE 21	
MAX R/C/ENDURANCE	IAS 22			FUEL 23		TORQUE 24	
MAX RANGE	IAS 25			FUEL 26		TORQUE 27	

FUEL MANAGEMENT

START (TIME lbs/gal)	STOP (TIME lbs/gal)	RESERVE (TIME)
28/29	30/31	32
FUEL FLOW	BURNOUT (TIME)	BINGO/RESERVE
33 PPH GPH	34	35 lbs/gal

ARRIVAL DATA

PA MAX 36	FAT MAX 37	LANDING GWT 38
MAX TORQUE AVAIL (MAX)	39	
CONT TORQUE AVAIL (MAX)	40	
HOVER IGE TORQUE (MAX)	41	
HOVER OGE TORQUE (MAX)	42	
MAX ALLOWABLE GWT IGE (MAX)	43	
MAX ALLOWABLE GWT OGE (MAX)	44	

REMARKS

This is sample data.

SAMPLE

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APD LF v1.00

Figure 4-2. DA Form 5701-228, page 1 (sample)

(1) HVR data.

- Item 1–AIRCRAFT GWT. Record the GWT at the departure point. If during the mission, the aircraft GWT significantly increases from the departure point, enter this WT also.
- Item 2–FUEL LB/GAL. Record fuel loading restrictions due to MAX allowable GWT and loading configuration.
- Item 3–FUEL LB/GAL. Record the estimated fuel (including reserve) required for the mission at the point of departure.
- Item 4–PA. Record the actual or forecast PA for the departure point at the time of departure. Record the MAX PA forecast for the duration of the mission.
- Item 5–FREE AIR TEMPERATURE (FAT). Record the actual or forecast FAT for the departure point at the time of departure. Record the MAX FAT forecast for the duration of the mission.
- Item 6–LOAD AVAIL. Subtract the difference between the MAX WT recorded in 1 and the MAX allowable GWT recorded in 11 or 12 (as applicable to the mission profile) and record this value.
- Item 7–MAX TORQUE (TQ) AVAIL. Compute and record the MAX TQ AVAIL using the applicable MAX TQ AVAIL (30 MINUTE OPERATION) chart (OH-58A/C) or MAX TQ AVAIL (5 MINUTE OPERATION) chart (TH-67) and the departure information recorded in 4 and 5. If a significant increase exists between the departure and MAX recorded in 4 and 5, then also compute and record this TQ value using MAX conditions.
- Item 8–CONTINUOUS (CONT) TORQUE (TQ) AVAIL. Compute and record the MAX TQ AVAIL using the applicable TQ AVAIL CONT OPERATION chart and the departure information recorded in 4 and 5. If a significant increase exists between the departure and MAX recorded in 4 and 5, then also compute and record this TQ value using MAX conditions.
- Item 9–HOVER (HVR) (in-ground effect [IGE]) TQ. Compute and record the TQ required to HVR at 3 feet for low skid gear and 4 feet for high skid gear, using the HVR chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the departure conditions found in 1, 4, and 5. If a significant increase exists between the departure and MAX recorded in 4 and 5, then also compute and record this TQ value using MAX conditions.
- Item 10–HOVER (HVR) OGE TQ. Compute and record the TQ required to HVR OGE (50 feet OH-58A/C and TH-67) using the HVR chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the departure conditions found in 1, 4, and 5. If a significant increase exists between the departure and MAX recorded in 4 and 5, then also compute and record this TQ value using MAX conditions.
- Item 11–MAX ALLOWABLE GWT IGE. Compute and record the MAX allowable GWT at 3 feet using the HVR or HVR CEILING chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the departure conditions found in 4 and 5. If a significant increase exists between the departure and MAX recorded in 4 and 5, then also compute and record this MAX allowable GWT using MAX conditions.
- Item 12–MAX ALLOWABLE GWT OGI. Compute and record the MAX allowable GWT to HVR OGE using the HVR or HVR CEILING chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the departure conditions found in 4 and 5. If a significant increase exists between the departure and MAX recorded in 4 and 5, then also compute and record this MAX allowable GWT using MAX conditions.
- Item 13–SAFE PEDAL (OH-58A/C Only). Using the HVR chart and the MAX values recorded in 1, 4, and 5, determine if a 10 percent (%) directional control margin exists. Circle YES if the directional control margin exists at 35 knots or greater. Circle NO if the directional control margin is less than 35 knots and record the MAX permissible right crosswind to the right of the circle.

(2) Cruise data.

- Item 14–GWT. Record the estimated GWT for the cruise or en route portion of the mission.

- Item 15–ALT. Record the planned cruise altitude (ALT).
- Item 16–FAT. Record the forecasted or estimated FAT at the planned cruise altitude.
- Item 17–Velocity never exceed (VNE). Compute and record the MAX indicated airspeed using the AIRSPEED OPERATING LIMITS chart (OH-58A/C) or airspeed limitations placard (TH-67) and the conditions recorded in 14, 15 and 16.
- Item 18–Indicated airspeed (IAS). Enter the planned IAS for the initial planned cruise altitude.
- Item 19–TAS. Compute and record the TAS using the appropriate CRUISE chart and the information recorded in 15 and 16.
- Item 20–CRUISE FUEL FLOW. Compute and record the cruise fuel flow using the appropriate CRUISE chart and the information recorded in 14, 15 and 16. If the aircraft is configured other than clean, apply the fuel flow increase resulting from the increase in TQ required determined from the DRAG chart (OH-58A/C only).
- Item 21–CRUISE TORQUE (TQ). Compute and record the cruise TQ using the appropriate CRUISE chart and the information recorded in 14, 15 and 16. If the aircraft is configured other than clean, apply the TQ increase determined from the DRAG chart (OH-58A/C only).
- Item 22–MAX R/C/endurance. Compute and record the MAX R/C/endurance airspeed using the appropriate CRUISE chart and the information recorded in 14, 15 and 16.
- Item 23–MAX Endurance FUEL FLOW. Compute and record the fuel flow at MAX endurance airspeed using the appropriate CRUISE chart and the information recorded in 14, 15 and 16. If the aircraft is configured other than clean, apply the fuel flow increase resulting from the increase in TQ required determined from the DRAG chart (OH-58A/C only).
- Item 24–MAX END TORQUE (TQ). Compute and record the TQ required to maintain the MAX Endurance airspeed using the appropriate CRUISE chart and the information recorded in 14, 15 and 16. If the aircraft is configured other than clean, apply the TQ increase determined from the DRAG chart (OH-58A/C only).
- Item 25–MAX RANGE. Compute and record the MAX range airspeed using the appropriate CRUISE chart and the information recorded in 14, 15 and 16.
- Item 26–MAX RANGE FUEL FLOW. Compute and record the fuel flow at MAX range airspeed using the appropriate CRUISE chart and the information recorded in 14, 15 and 16. If the aircraft is configured other than clean, apply the fuel flow increase resulting from the increase in TQ required determined from the DRAG chart (OH-58A/C only).
- Item 27–MAX RANGE TORQUE (TQ). Compute and record the TQ required to maintain the MAX range airspeed using the appropriate CRUISE chart and the information recorded in 14, 15 and 16. If the aircraft is configured other than clean, apply the TQ increase determined from the DRAG chart (OH-58A/C only).

Note. Use the PA closest to the planned cruise altitude when computing CRUISE DATA.

(3) Fuel management.

- Item 28–START TIME/LB/GAL. Record the current time upon initiating the in flight fuel check.
- Item 29–START TIME/LB/GAL. Record the indicated fuel upon initiating the in flight fuel check.
- Item 30–STOP TIME/LB/GAL. Record the current time upon concluding the in flight fuel check.
- Item 31–STOP TIME/LB/GAL. Record the indicated fuel upon concluding the in flight fuel check.
- Item 32–RESERVE. Compute and record the time the aircraft will enter the reserve fuel time appropriate for the mission using the information recorded in 30, 31, and 33.
- Item 33–FUEL FLOW LB/GAL. Compute and record the fuel flow using the information derived from 28, 29, 30, and 31.

- Item 34–BURNOUT. Compute and record the time the aircraft will run out of fuel using the information derived from 30, 31 and 33.
- Item 35–BINGO LB/GAL. If the mission calls for loitering time on station, compute and record the minimum fuel required to fly from the loiter area to the planned refuel point using the information recorded in 33.

Note. The same performance planning card will suffice for consecutive takeoffs and landings when the load or environmental conditions have not increased significantly (5 °C, 500 feet PA, or 100 lb.

(4) Arrival Data. Using aircraft performance charts or tabular data compute arrival data if environmental conditions are higher by 5 °C, 500 feet PA, or if the aircraft WT increases 100 lb from takeoff point.

- Item 36–PA MAX. Record the MAX PA forecast for the destination at the estimated time of arrival (ETA).
- Item 37–FAT MAX. Record the MAX FAT forecast for the destination at the ETA.
- Item 38–LANDING GWT. Record the estimated GWT of the aircraft at landing.
- Item 39–MAX TQ AVAIL. Compute and record the MAX TQ AVAIL using the applicable MAX TQ AVAIL (30 MINUTE OPERATION) chart (OH-58A/C) or MAX TQ AVAIL (5 MINUTE OPERATION) chart (TH-67) and the arrival information recorded in 36 and 37.
- Item 40–CONT. TORQUE (TQ) AVAIL. Compute and record the CONT. TQ AVAIL using the applicable TQ AVAIL CONT. OPERATION chart and the arrival information recorded in 36 and 37.
- Item 41–HOVER (HVR) IGE TORQUE (TQ). Compute and record the TQ required to HVR at 3 feet for low skid gear or 4 feet for high skid gear, using the HVR chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the arrival conditions found in 36, 37 and 38.
- Item 42–HVR OGE TQ. Compute and record the TQ required to HVR OGE (50 feet OH-58A/C and TH-67) using the HVR chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the arrival conditions found in 36, 37 and 38.
- Item 43–MAX ALLOWABLE GWT IGE. Compute and record the MAX allowable GWT at 3 feet using the HVR or HVR CEILING chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the arrival conditions found in 36 and 37.
- Item 44–MAX ALLOWABLE GWT OGE. Compute and record the MAX allowable GWT to HVR OGE using the HVR or HVR CEILING chart (OH-58A/C) or the HVR-TQ REQUIRED chart (TH-67) and the departure conditions found in 36 and 37.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

Note. The same PPC will suffice for consecutive takeoffs and landings when the load or environmental conditions have not increased significantly (5 °C, 500 feet PA, or 100 lb).

REFERENCES: Appropriate common references, OH-58A/C, and TH-67 flight training guide.

TASK 1012

Verify Aircraft Weight and Balance

CONDITIONS: Given crewmember WTs, OH-58A/C or TH-67 aircraft configuration and aircraft weight and balance information, the operator's manual/supplement, and a completed DD Form 365-4 (Weight and Balance Clearance Form F-Transport/Tactical).

STANDARDS: Apply appropriate common standards and the following:

1. Verify that CG and GWT remain within aircraft limits for the duration of the flight IAW AR 95-1 and TM 55-1520-228-10/TH-67 operator's supplement.
2. Identify all mission or flight limitations imposed by WT or CG.

DESCRIPTION:

1. Crew actions.

   a. The PC will brief the PI on any limitations. The PI (if directed) will verify or complete the DD Form 365-4 and report the results to the PC.

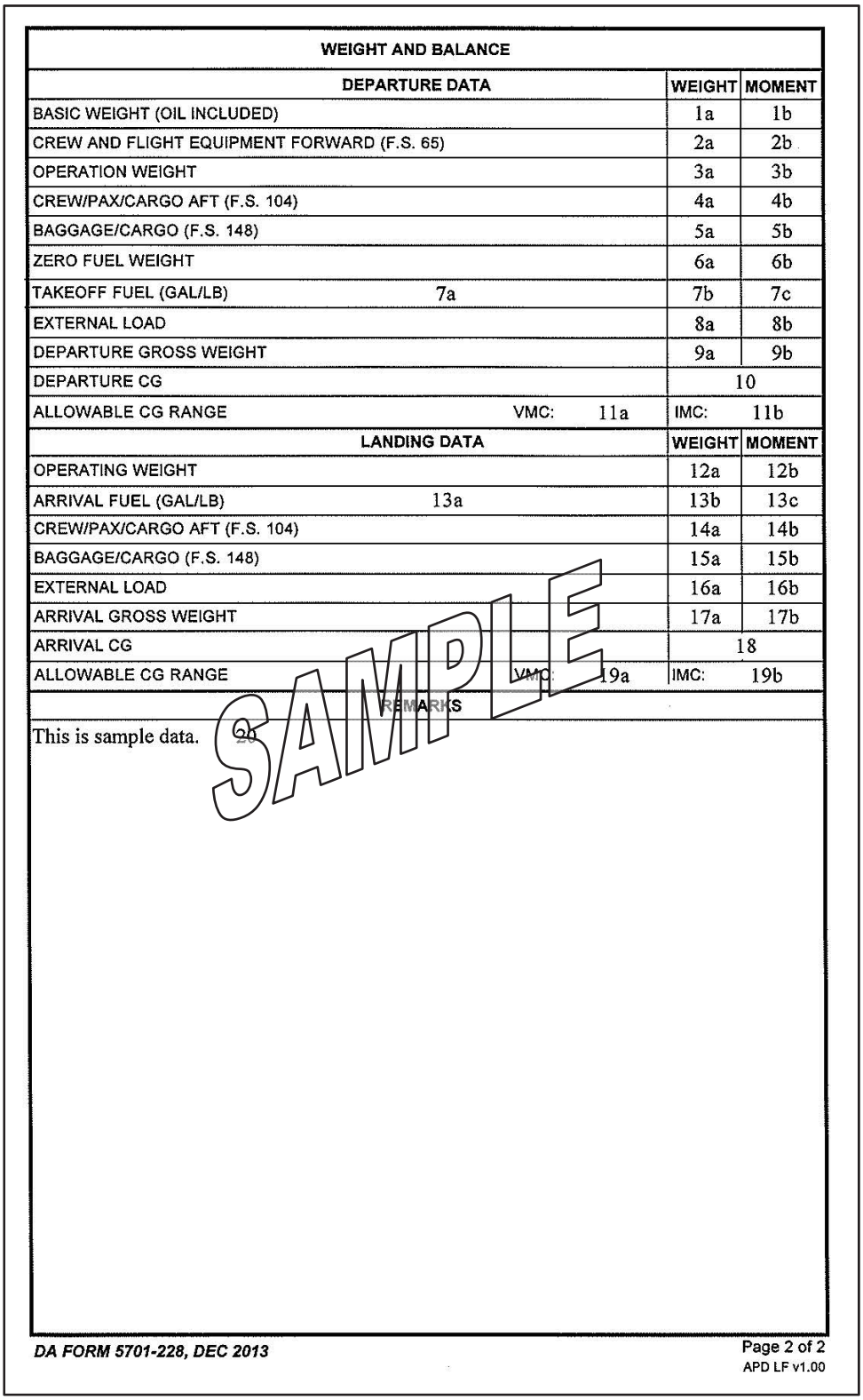
   b. Both crewmembers will continually monitor aircraft loading during the mission to ensure CG remains within limits.

2. Procedures.

   a. Using the completed DD Forms 365-4, verify that aircraft GWT and CG will remain within the allowable limits for the entire flight. Note all GWT, loading task/maneuver restrictions/limitations. If there is no completed DD Form 365-4 that meets mission requirements, refer to the unit weight and balance technician, TM 55-1500-342-23, or complete a new DD Form 365-4 (to meet the criteria outlined in AR 95-1) and the aircraft is capable of completing the assigned mission.

   b. Verify the aircraft CG in relation to CG limits at predetermined times during the flight when an aircraft's configuration requires special attention.

Note. DA Form 5701-228, page, 2 (Weight and Balance) (figure 4-2, page 4-20) may be used as an aid to verify DD Form 365-4. Use of DD Form 365-4 will be IAW AR 95-1.



WEIGHT AND BALANCE				
DEPARTURE DATA			WEIGHT	MOMENT
BASIC WEIGHT (OIL INCLUDED)			1a	1b
CREW AND FLIGHT EQUIPMENT FORWARD (F.S. 65)			2a	2b
OPERATION WEIGHT			3a	3b
CREW/PAX/CARGO AFT (F.S. 104)			4a	4b
BAGGAGE/CARGO (F.S. 148)			5a	5b
ZERO FUEL WEIGHT			6a	6b
TAKEOFF FUEL (GAL/LB)	7a		7b	7c
EXTERNAL LOAD			8a	8b
DEPARTURE GROSS WEIGHT			9a	9b
DEPARTURE CG			10	
ALLOWABLE CG RANGE	VMC:	11a	IMC:	11b
LANDING DATA			WEIGHT	MOMENT
OPERATING WEIGHT			12a	12b
ARRIVAL FUEL (GAL/LB)	13a		13b	13c
CREW/PAX/CARGO AFT (F.S. 104)			14a	14b
BAGGAGE/CARGO (F.S. 148)			15a	15b
EXTERNAL LOAD			16a	16b
ARRIVAL GROSS WEIGHT			17a	17b
ARRIVAL CG			18	
ALLOWABLE CG RANGE	VMC:	19a	IMC:	19b

REMARKS

This is sample data. 20

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Figure 4-3. DA Form 5701-228, page 2 (sample)

3. This document presents the format for the manual verification of the weight and balance calculations for the OH-58A/C and TH-67 aircraft.

a. Departure data.

- **Item 1-BASIC WT (Oil Included)**. Record the basic aircraft WT and moment from DD Form 365-4 in item 1a and 1b, respectively.

Note. Moment is a term used to describe a product of a force or WT, times a distance.

- **Item 2-CREW AND FLIGHT EQUIPMENT FORWARD FUSELAGE STATION (F.S. 65)**. Record the WT determined by the aircrew in item 2a. Record in item 2b the corresponding moment from the Cabin and Baggage Compartment Table of Moments using F.S. 65 depicted in the OH-58A/C operators manual, chapter 6, or in the TH-67 operator's supplement, chapter 6. Simplify the moment by dividing it by 100 and round to the nearest whole number, and record the moment in item 2b.

Note. The above moment has been reduced in magnitude through division by a constant (100). For example, 160 is a simplified expression of 16250 ÷ 100 and rounded off to the nearest whole number. The advantage of simplification will be seen in application when a column of moments is added. Inaccuracies resulting from rounding off figures tend to cancel.

- **Item 3-OPERATING WT**. Add WTs (items 1a and 2a) and moments (items 1b and 2b), then record the WT in item 3a and the moment in item 3b.
- **Item 4-CREW/PAX/CARGO AFT (F.S. 104)**. Repeat the procedure listed in Item 2 above with the exception of using F.S. 104. Record the WT in Item 4a and the moment in item 4b.
- **Item 5-BAGGAGE/CARGO (F.S. 148)**. Repeat the procedure listed in item 2 above with the exception of using F.S. 148. Record the WT in item 5a and the moment in item 5b.
- **Item 6-ZERO FUEL WT**. Add WTs (items 3a, 4a and 5a = 6a) and moments (items 3b, 4b and 5b = 6b), then record the WT in item 6a and the moment in item 6b.
- **Item 7-TAKEOFF FUEL GAL**. Record in item 7a the amount of fuel in lb from the performance planning card (item 3). Compute the corresponding WT and moment from the appropriate fuel loading table depicted in the OH-58A/C operator's manual, chapter 6, or in the TH-67 operator's supplement, chapter 6. Simplify the moment by dividing it by 100 and round to the nearest whole number, and record the WT in item 7b and the moment in item 7c.
- **Item 8-EXTERNAL LOAD**. Record the WT of the external load in item 8a and the moment in item 8b.
- **Item 9-DEPARTURE GWT**. Add WTs (items 6a, 7a and 8a = Item 9a) and moments (items 6b, 7b and 8b = Item 9b), then record the WT in item 9a and the moment in item 9b.
- **Item 10-DEPARTURE CG.** Divide the departure moment (9b) by the departure WT (9a) and multiply the result by 100. Record the result in item 10.

Note. The result of the division in (10) was multiplied by the constant (100) to reverse the process of simplification.

- **Item 11-ALLOWABLE CG RANGE.** To determine the correct CG limit, use the applicable CG Limit Chart depicted in the OH-58A/C operator's manual, chapter 6, or in the TH-67 operator's supplement, chapter 6. Record the results in Item 11a (VMC) and 11b (IMC).

b. Landing data.

- **Item 12-OPERATING WT**. Record the WT in item 3a as item 12a and the moment in item 3b as item 12b.
- **Item 13-ARRIVAL FUEL GAL.** Subtract fuel required to complete the mission minus the reserve (item 3 from the performance planning card minus VFR = 20 minutes or IFR = 30 minutes) from takeoff fuel lb/lb in item 7a and record the result in item 13a. Record the corresponding WT (item 13b) and moment (item 13c) using the applicable Fuel Loading Table

depicted in the OH-58A/C operators manual, chapter 6, or in the TH-67 operator's supplement, chapter 6.

- **Item 14-CREW/PAX/CARGO AFT (F.S. 104)**. Record the WT in item 4a as item 14a and the moment in item 4b as item 14b.
- **Item 15-BAGGAGE/CARGO (F.S. 148)**. Record the WT in item 5a as item 15a and the moment in item 5b as item 15b.
- **Item 16-EXTERNAL LOAD**. Record the WT in item 8a as item 16a and the moment in item 8b as item 16b.
- **Item 17-ARRIVAL GWT.** To establish the arrival WT and moment, add the arrival fuel lb/lb WT to the zero fuel WT (item 13a + item 6a). Add the external load WT (item 16a) to this value and record the WT result in item 17a (items 13a + 6a + 16a = 17a). Add the arrival fuel lb/lb moment to the zero fuel moment (item 13b + item 6b). Add the external load moment (item 16b) to this value and record the moment result in item 17b (items 13b + 6b + 16b = 17b).
- **Item 18-ARRIVAL CG.** Divide the arrival moment (17b) by the arrival WT (17a) and multiply the result by 100. Write the result (arrival CG) in item 18.

Note. The result of the division in (18) was multiplied by the constant (100) to reverse the process of simplification.

- **Item 19-ALLOWABLE CG RANGE.** To determine the correct CG limit, use the applicable CG Limit Chart depicted in the OH-58A/C operator's manual, chapter 6, or in the TH-67 operator's supplement, chapter 6. Record the results in item 19a (VMC) and 19b (IMC).
- **Item 20-REMARKS.** Use as needed (for example parking spot, forecast weather, alternate requirements).

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

REFERENCES: Appropriate common references, DD Form 365-4, OH-58A/C and TH-67 FTG.

TASK 1014

Operate Aviation Life Support Equipment

CONDITIONS: Given the appropriate ALSE for the mission.

STANDARDS: Apply appropriate common standards and the following:

1. Inspect/perform operational checks on ALSE.
2. Use ALSE IAW the appropriate operator's manual/instructions for each piece of equipment.

DESCRIPTION:

1. Crew actions. The PC will verify that all required ALSE equipment is onboard the aircraft before takeoff.
2. Procedures. Based on mission requirements, obtain the required ALSE. Inspect equipment for serviceability and perform required operational checks. Secure the required ALSE in the aircraft IAW AR 95-1, FM 3-04.508, operator's manual/supplement and the unit SOPs.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

REFERENCES: Appropriate common references, EM 0250, TM 5-4220-202-14, TM 55-1680-317-23&P, TM 55-1680-351-10, TM 1-1680-337-13P&1 and TM 1-1500-328-23.

TASK 1022

Perform Pre-Flight Inspection

CONDITIONS: At the aircraft location given an aircraft specific manual or CL and proper personal flight gear.

STANDARDS: Apply appropriate common standards and the following:

1. Inspect the aircraft IAW TM 1-1520-228-CL/supplement CL or TM 55-1520 228-10/supplement. Inspect the personal flight gear IAW local SOP.
2. Enter all appropriate information on DA Form 2408-12 (Army Aviator's Flight Record), DA Form 2408-13 (Aircraft Status Information Record), and DA Form 2408-13-1 (Aircraft Inspection and Maintenance Record).

DESCRIPTION: Crew actions/procedures.

1. The PC is responsible for ensuring that the OH-58A/C pre-flight inspection is conducted using the TM 1-1520-228-CL or TM 55-1520-228-10. The TH-67 pre-flight will be completed using the TH-67 operators supplement CL or operators supplement at the discretion of the PC. The PC may direct the PI to complete elements of the aircraft pre-flight inspection as applicable, and will verify that all checks have been completed. The PC will report any aircraft discrepancies that may affect the mission and will ensure that the appropriate information is entered on DA Form 2408-12, DA Form 2408-13, and DA Form 2408-13-1.
2. The PC will ensure a walk-around inspection is complete prior to aircraft start.
3. The PI will complete the assigned elements and report the results to the PC.

Note. If circumstances permit, accomplish pre-flight inspection during daylight hours.

Note. The crew performing the pre-flight should be aware of any recent maintenance that has occurred and should consider examining those areas in greater detail.

NIGHT CONSIDERATIONS: A white lens flashlight should be used if performing the pre-flight inspection during the hours of darkness. Hydraulic leaks, oil leaks and other defects are difficult to see using a flashlight with a colored lens.

SNOW/SAND/DUST CONSIDERATIONS: If an aircraft is pre-flighted any time other than immediately prior to flight, consideration should be given to reinstalling aircraft covers to prevent accumulation of snow/sand/dust in aircraft and equipment. Ensure all ice/snow accumulations are removed from the aircraft before starting engine.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted at the aircraft (for aircraft pre-flight) and academically (for personal gear).
2. Evaluation will be conducted at the aircraft (for aircraft pre-flight) and academically (for personal gear).

REFERENCES: Appropriate common references and TC 3-04.11.

TASK 1024

Perform Before Starting Engine through Before Leaving Helicopter Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. Perform procedures and checks IAW TM 1-1520-228-CL/TM 55-1520-228-10/ TH-67 operators supplement CL or operators supplement. Evaluations will be conducted utilizing the TM 1-1520-228CL/TH-67 operators supplement CL from Engine Start through Engine shutdown checks.
2. Enter appropriate information on DA Form 2408-12 (Army Aviator's Flight Record), DA Form 2408-13 (Aircraft Status Information Record), and DA Form 2408-13-1 (Aircraft Inspection and Maintenance Record).
3. Complete post-flight inspection and secure the aircraft.

DESCRIPTION:

1. Crew actions.
   a. Both crewmembers will complete the required OH-58A/C checks pertaining to assigned crew duties using TM 1-1520-228-CL/ TM 55-1520-228-10, and the required TH-67 checks using the TH-67 operators supplement CL/operators supplement. They will clear the area around the aircraft before starting engine.
   b. The P* will announce when starting the engine.
   c. Enter appropriate information on DA Form 2408-12, DA Form 2408-13, and DA Form 2408-13-1.
   d. PC ensures aircraft is secure before departing.
2. Procedures.
   a. Perform the before starting engine checks through before leaving helicopter checks per TM 1-1520-228-CL, TM 55-1520-228-10, the TH-67 operators supplement CL or TH-67 operators supplement. Crewmembers will use the CL to complete checks and procedures appropriate to their crew station.
   b. Crewmembers will announce any check that involves an action by the opposite crewmember. The opposite station crewmember will reply with an answer that conveys understanding of the check and status in relation to that specific check.

Note. For single PI operations, the PC will complete all the above tasks.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following: Before starting the engine, ensure that all internal and external lights are set. Internal lighting levels must be high enough to easily see the instruments and to start the engines without exceeding operating limitations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft IAW TM 1-1520-228 -10 CL/operator supplement CL.

REFERENCES: Appropriate common references and TC 3-04.11.

TASK 1026

Maintain Airspace Surveillance

CONDITIONS: While operating an OH-58A/C or in a TH-67 helicopter maintain communication with crew members to ensure aircraft remains clear of obstacles or hazards that may affect the safety of flight.

STANDARDS: Apply appropriate common standards; and alert the wingman, team, section, and unit to all sightings of other aircraft, obstacles, or unknowns that may pose a threat.

DESCRIPTION:

1. Crew actions.

   a. The PC will brief airspace surveillance performance prior to the flight. The briefing will include areas of responsibility and scan sectors.

   b. The P will inform the P* of any unannounced heading, altitude, attitude or position changes. The P will announce his inability to assist due to concentration inside the aircraft.

   c. When landing, the crew will confirm the suitability of the area and that the aircraft is clear of barriers.

2. Procedures.

   a. Maintain close surveillance of the surrounding airspace. Keep the aircraft clear from other aircraft and obstacles by maintaining visual (close, mid, and far areas) surveillance of the surrounding airspace. Inform the other crew member or other aircraft by voice radio immediately of any air traffic or obstacles that pose, or may pose, a threat. Call out the location of traffic or obstacles by the clock position, altitude, and distance method. (The 12 o'clock position is at the nose of the aircraft). When reporting air traffic, specify the type of aircraft (fixed-wing or helicopter) and if known, the model. Give direction of travel; for example, left to right, right to left, climb, or descent. The altitude of the air traffic should be reported as the same, higher, or lower than the altitude at which you are flying.

   b. Prior to changing altitude or heading, visually clear the aircraft for hazards and obstacles. Hazards and obstacles will be noted by each crew member and information shared.

   c. Prior to performing a descending flight maneuver, it may sometimes be desirable to perform a clearing "S" turn to the left or right. The clearing "S" turn will provide the aircrew with a greater visual scan area.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1028

Perform Hover Power Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with performance planning information available.

STANDARDS: Apply appropriate common standards and the following:

1. Perform the HVR PWR check near the takeoff point and in the direction of takeoff.
2. Maintain a stabilized 3-foot HVR and determine that sufficient PWR is AVAIL to complete the mission.

DESCRIPTION:

1. Crew actions.

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

   b. The P* will remain primarily focused outside the aircraft to maintain clearance and announce when the aircraft is stabilized at the appropriate HVR height.

   c. The P will monitor the aircraft instruments. The P will announce HVR TQ and MAX TQ AVAIL and alert the P* of the difference. The P will announce when the PWR check is complete.

2. Procedures. While near the intended takeoff point and in the direction of takeoff; establish the aircraft at a stabilized 3-foot HVR. Compare the actual TQ required to HVR with the predicted MAX TQ AVAIL. Depending on the TQ differential, the following takeoff and landing restrictions apply:

   a. Less than 5% TQ differential. Ensure that adequate room exists for takeoff with minimum or existing PWR. The destination must allow a normal or shallower-than-normal approach to landing areas with a surface, which will permit a descent to the ground if necessary.

   b. Five to 9% TQ differential. Normal approaches and takeoffs may be performed.

   c. Ten to 14% TQ differential. Steep approaches, instrument takeoffs and confined area operations may be performed.

   d. 15% or more TQ differential. Takeoff and landing restrictions do not apply.

   e. The aircrew will not attempt the tasks listed below if the 3-foot HVR PWR check indicates that less than 15% TQ differential exists indicating that OGE PWR is not AVAIL.

   - **Task 1030, Perform Hover Out-of-Ground Effect Check**.
   - **Task 1407, Perform Terrain Flight Takeoff**.
   - **Task 1408, Perform Terrain Flight**
   - **Task 1409, Perform Terrain Flight Approach**.
   - **Task 1411, Perform Terrain Flight Deceleration.**
   - **Task 1400, Perform Maximum Performance Takeoff**.
   - **Task 2125, Perform Pinnacle or Ridgeline Operations**.
   - **Task 2215, Perform Urban Helipad Operations**.
   - **Task 2230, Perform Platform Landing/Takeoff Operations**.
   - **Task 2240, Perform High Altitude Operations/Low Reconnaissance**.
   - **Task 2410, Perform Masking and Unmasking**.

Note. Anytime the load or environmental conditions increase significantly (5 °C, 500 feet PA, or 100 lbs aircraft WT), additional HVR PWR checks must be performed.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and TC 3-04.11**.**

TASK 1030

Perform Hover Out of Ground Effect Check

CONDITIONS: In an OH-58A/C or in a TH-67 aircraft with performance planning information AVAIL and the aircraft oriented into the wind.

STANDARDS: Apply appropriate common standards and the following:

1. Determine if aircraft PWR and controllability are sufficient by establishing an OGE HVR altitude of 50 feet above the ground, or highest obstacle; whichever is greater, ±10 feet.
2. Determine if aircraft PWR and controllability are sufficient.
3. Do not exceed 300 FPM during the vertical descent.

DESCRIPTION:

1. Crew actions.
   a. The P* will remain focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance. The P* will acknowledge all drift and obstacle clearance instructions given by the P.
   b. The P will provide drift and obstacle information to the P* and will note the highest TQ and Turbine Outlet Temperature (TOT) values observed. The P will warn the P* if it appears that limitations may be exceeded.
2. Procedures. Vertically ascend to 50 feet or above surrounding obstacles, whichever is higher. Constantly monitor TOT, TQ, and aircraft instruments while not exceeding any limitations. Execute a 360° left pedal turn while constantly checking aircraft PWR and controllability. Terminate the maneuver at an IGE HVR, on the ground, or as required.

Note. An OGE HVR check should be verified anytime aircraft controllability or PWR is in doubt.

Note. OGE HVR PWR is required prior to performing an OGE check.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following:

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

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1032

Perform Radio Communication Procedures

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. Check and operate aircraft avionics.
2. Establish and maintain radio contact with the desired individual, unit or ATC facility.
3. Employ standard radio communication procedures, terms, and phraseology applicable to the situation.
4. Operate intercom system.
5. Perform two-way radio failure procedures IAW the FIH or host country regulations.

DESCRIPTION:

1. Crew actions.

   a. The PC will assign radio frequencies IAW mission requirements during the crew briefing and will indicate which crewmember will establish and maintain COMM.

   b. The P* remains focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance. The P* will maintain COMM on his assigned radios.

   c. The P will monitor radios and perform frequency changes as directed. The P will copy/read pertinent information as requested by the P*. In case of two-way radio failure, the P will attempt to reestablish communication.

2. Procedures.

   a. Set radios and frequencies as required. Copy all pertinent information. Select the proper frequency on the appropriate radio as required/directed. Continuously monitor the radios as directed by the PC. Monitor the frequency before transmitting. Use the correct radio call sign when acknowledging each COMM.

   b. When advised to change frequencies, acknowledge the instructions. Select, or request the other crewmember to select, the new frequency as soon as possible unless instructed to do so at a specified time, control measure, fix, or altitude. Use standard radio communication procedures, terms and phraseology as appropriate for the area and type of operations.

   Note: Units utilizing the Wulfsburg radio system will train personnel to appropriate standards IAW Appendix C.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1038

Perform Hovering Flight

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter, with before-takeoff check completed and aircraft cleared.

STANDARDS: Apply appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The P* will announce his intent to perform a specific hovering flight maneuver and will remain focused outside the aircraft. The P* will announce the termination of the maneuver.

   b. The P will assist in clearing the aircraft and will provide adequate warning of obstacles and unannounced or unusual drift/altitude changes. The P will announce when attention is focused inside the cockpit and again when attention is outside.

2. Procedures. Control heading, direction of turn and rate of turn with the pedals. Control altitude, rate of ascent, and rate of descent with the collective. Control the position and direction of movement with cyclic.

   a. Takeoff to a HVR. With the collective full down place the cyclic in a neutral position. Increase the collective until the aircraft becomes "light on the skids", apply pressure and counter-pressure on the pedals to ensure the aircraft is free to ascend. Apply pedals as necessary to maintain heading, and 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 HVR altitude adjust the flight controls to maintain position over the intended HVR point. If slope conditions are suspected, refer to Task 1062.

   b. Hovering flight. Adjust the cyclic to maintain a stationary HVR or to move in the desired direction. Control heading with pedals, and maintain altitude with the collective. Maintain a constant HVR speed. To return to a stationary HVR, apply the cyclic in the opposite direction while maintaining altitude with collective and heading with the pedals.

   c. Hovering turns. Clear the aircraft. Apply pressure to the desired pedal to begin the turn. Use pressure and counter pressure on the pedals to maintain a constant rate of turn. Coordinate cyclic to maintain position over the pivot point while maintaining altitude with the collective. (Hovering turns can be made around the vertical axis, nose, or tail of the aircraft.)

   d. Landing from a HVR. From a stationary HVR, lower the collective to effect a smooth descent to touchdown. Make all necessary corrections with the pedals and cyclic to maintain a constant heading and position. On ground contact, ensure that the aircraft remains stable. Continue decreasing the collective smoothly and steadily until the entire WT of the aircraft is on the ground. Neutralize the pedals and cyclic, and reduce the collective to the fully down position. If slope conditions are suspected, refer to Task 1062.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following:

- Movement over areas of limited contrast, such as tall grass, water, or desert, tends to cause spatial disorientation.
- To avoid spatial disorientation, seek HVR areas that provide adequate contrast and use proper scanning techniques.
- If disorientation occurs, apply sufficient PWR and execute a takeoff.
- If a takeoff is not feasible, try to maneuver the aircraft forward and down to the ground to limit the possibility of touchdown with sideward or rearward movement.

SNOW/SAND/DUST CONSIDERATIONS:

1. Apply appropriate common considerations.

2. During ascent to a HVR, if visual references deteriorate to an unacceptable level, continue ascent to a HVR altitude above the blowing conditions. The P should keep the P* informed of the location of the snow/sand/dust cloud.

a. Ten-foot HVR taxi. During takeoff to a HVR, simultaneously accelerate the aircraft to a ground speed that keeps the snow/sand/dust cloud behind the main rotor mast. Maintain optimum visibility by observing references close to the aircraft. Exercise caution when operating in close proximity to other aircraft or obstacles.

Note: When visual references deteriorate making a 10-foot HVR taxi unsafe, determine whether to abort the maneuver, ground taxi, air taxi, or perform a takeoff.

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b. Twenty to one hundred-foot air taxi. Use this maneuver when it is necessary to move the aircraft over terrain that is unsuitable for HVR taxi. Initiate air taxi the same as for a 10-foot HVR, but increase altitude to not more than 100 feet and accelerate to a safe airspeed above effective transitional lift (ETL). Ensure that an area is AVAIL to safely decelerate and land the aircraft. Under certain conditions (for example, adverse winds), it may be necessary to perform a traffic pattern to optimize conditions at the desired termination point.

MUD/MUSKEG/TUNDRA CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, DOD FLIPs, and general planning publication.

TASK 1040

Perform Visual Meteorological Conditions Takeoff

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with HVR PWR and before take-off checks complete.

STANDARDS: Apply appropriate common standards and the following:

1. Initiate takeoff from an appropriate HVR altitude or from the ground.
2. Maintain takeoff PWR until reaching desired airspeed for mode of flight.

DESCRIPTION:

1. Crew actions.

   a. The P* will remain focused outside the aircraft during the maneuver. The P* is responsible for clearing the aircraft and obstacle avoidance. The P* will announce whether the takeoff is from the ground or from a HVR and his intent to abort or alter the takeoff. The P* will consider snow, sand, and obstacle barrier clearance when evaluating the PWR required versus PWR AVAIL.

   b. The P will complete the before-takeoff checks and announce when ready for takeoff. The P will remain focused primarily outside the aircraft to assist in clearing the aircraft and to provide adequate warning of obstacles. The P will monitor PWR requirements and advise the P* if PWR limits are being approached.

   c. The PC will determine the direction and type of takeoff by analyzing the PWR AVAIL, the wind, the long axis of the takeoff area, and the lowest obstacles.

2. Procedures.

   a. VMC takeoff 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 counter-pressure on the pedals to ensure the aircraft is free to ascend. Maintain heading with the pedals.

   b. Continue increasing the collective until the aircraft leaves the ground. As the aircraft leaves the ground, apply cyclic as required to accelerate forward through ETL at an altitude to clear terrain and obstacles.

   c. As the aircraft reaches ETL, adjust the cyclic to obtain the desired climb airspeed. Maintain ground track and keep the aircraft aligned with takeoff direction below 50 feet; then place the aircraft in trim above 50 feet AGL. Position the collective to establish the desired R/C.

   Note. If more than HVR PWR is used for takeoff; maintain that PWR setting until approximately 10 knots prior to reaching climb airspeed. Then adjust PWR as required to establish the desired R/C and airspeed. Instruments should be cross-checked by the P.

   d. VMC takeoff from a HVR. Select reference points to maintain ground track. Apply forward cyclic to accelerate the aircraft while maintaining altitude with the collective. Perform the rest of the maneuver the same as a takeoff from the ground.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following:

1. If sufficient illumination or NVG resolution exists to view obstacles, the P* can accomplish the takeoff in the same way as he does a normal VMC takeoff during the day. If sufficient illumination or NVG resolution does not exist, he should perform an altitude-over-airspeed takeoff to ensure obstacle clearance. The P* may perform the takeoff from a HVR or from the ground.
2. Reduced visual references during the takeoff and throughout the ascent at night may make it difficult to maintain the desired ground track. The crew should know the surface wind direction and velocity. This P will assist the P* in establishing and maintaining the desired ground track.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations and as the aircraft clears the snow/sand/dust cloud and all barriers, accelerate to climb airspeed and trim the aircraft.

MUD/MUSKEG/TUNDRA CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft. 60 knots indicated airspeed (KIAS) and 500 FPM R/C is generally used in a training environment.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1044

Navigate by Pilotage and Dead Reckoning

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter, given the appropriate maps, plotter, flight computer, and flight log.

STANDARDS: Apply appropriate common standards and the following:

1. Maintain course orientation within 500 meters of the planned route, or the actual aircraft position if deviation from the planned route is required. (1000 meters for night/NVG).
2. Arrive at checkpoints/destination ±3 minutes of ETA.

DESCRIPTION:

1. Crew actions.

   a. The P* will acknowledge commands issued by the P for the heading, altitude and airspeed changes necessary to navigate the desired course. The P* will announce significant surface features to assist in navigation.

   b. The P will direct the P* to change aircraft heading and airspeed as appropriate to navigate the desired course. The P will use rally terms, specific headings, relative bearings, or key terrain features in accomplishing this task. The P will announce all plotted hazards prior to approaching their location. The P, as workload permits, will assist in clearing the aircraft and will provide adequate warning to avoid traffic and obstacles.

2. Procedures.

   a. After obtaining current weather forecasts, plan the flight by marking the route and appropriate checkpoints. Compute the time, distance and heading for each leg of the flight. Use both pilotage and dead reckoning to maintain the position of the aircraft along a planned route.

   b. Perform a ground speed check as soon as possible by computing the actual time required to fly a known distance. Adjust estimated times for subsequent legs of the route using actual ground speed. Determine correction for winds, if necessary, so that the airspeed or ground speed and heading can be computed for the remaining legs of the flight. Make heading corrections to maintain the desired course (ground track).

Note. Dead reckoning is defined as navigation by computations based on ground speed, ground track, and elapsed times. Pilotage is defined as navigation by features and maps.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following:

Interior cockpit lighting should be considered when selecting colors for preparing navigational aids (NAVAIDS) (for example, maps and knee board notes). Select prominent terrain features as turning points and barriers.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1048

Perform Fuel Management Procedures

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter after establishing cruising altitude or mission profile with PWR at appropriate setting.

STANDARDS: Apply appropriate common standards and the following:

1. Verify that the required amount of fuel is on board and initiate fuel consumption check at time of departure.
2. Complete the in-flight fuel consumption check 30 to 60 minutes after initiating fuel consumption check.
3. Initiate an alternate course of action if actual fuel consumption varies from the planning value and the flight cannot be completed with the required reserve.
4. Monitor fuel quantity and consumption rate during the flight.

DESCRIPTION:

1. Crew actions.

   a. The PC will brief fuel management responsibilities before takeoff. The PC will initiate an alternate course of action during the flight if the actual fuel consumption varies from the planning value and the flight cannot be completed with the required reserve.

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

   c. The P will record initial fuel figures, fuel flow computation, and burnout and reserve times. The P will announce when initiation and completion of the fuel check and the results of the fuel check.

2. Procedures.

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

   b. Fuel consumption check. With the aircraft in mission/cruise profile, 30 to 60 minutes after performing the initial fuel reading, record the remaining fuel and time of reading. Compute and record the rate of consumption, burnout, 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.

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

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, DOD FLIP, and general planning publication.

TASK 1052

Perform Visual Meteorological Conditions Flight Maneuvers

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards.

DESCRIPTION:

1. Crew actions.

a. The P* will remain focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance.

b. The P will assist in clearing the aircraft and will provide adequate warning to avoid traffic and obstacles. The P will announce when attention is focused inside the cockpit.

2. Procedures. Adjust cyclic as required to maintain the desired airspeed, course, ground track, or heading as appropriate. Adjust collective as required to maintain the desired climb/descent rate or altitude and maintain aircraft in trim with the pedals. Perform traffic pattern operations IAW ATC directives, local SOP, and FM 3-04.203.

a. VMC Climb. Increase collective to initiate climb. Adjust pedals to maintain aircraft in trim. Reduce collective to stop climb at desired altitude.

b. VMC Climbing turns. Increase collective to initiate climb. Adjust pedals to maintain aircraft in trim. Apply cyclic in the desired direction of turn. Adjust cyclic as required to stop turn on heading. Reduce collective to stop climb at desired altitude.

c. VMC Straight-and-level flight. Adjust collective to maintain altitude. Adjust pedals to maintain aircraft in trim. Maintain airspeed and heading.

d. VMC Level turns. Apply cyclic in the desired direction of turn. Adjust collective to maintain altitude. Adjust pedals to maintain aircraft in trim. Apply cyclic opposite the direction of turn to stop the turn on the desired heading.

e. VMC Descents. Decrease collective to initiate the descent. Adjust pedals to maintain aircraft in trim. Increase collective to stop rate of descent at the desired altitude.

f. VMC Descending turns. Decrease collective to initiate descent. Adjust pedals to maintain aircraft in trim. Apply cyclic in the desired direction of turn. Adjust cyclic as required to stop turn on desired heading. Increase collective to stop descent at desired altitude.

g. Traffic pattern flight.

(1) Maneuver the aircraft into position to enter the downwind leg midfield at a 45° angle (or IAW local procedures), at traffic pattern altitude, and at the desired airspeed. (A straight-in or base-leg entry may be used if approved by ATC.) On downwind, complete the before-landing check. Prior to turning base, reduce PWR and airspeed as required and initiate a descent. If performing a straight-in or a base-leg entry, reduce airspeed at a point to facilitate a VMC approach. Turn base and final leg, as appropriate, to maintain the desired ground track. Execute the desired approach. Announce and clear each turn in the pattern and the type of approach planned.

(2) 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 PWR and attitude, as required, to maintain traffic pattern altitude and airspeed.

h. Before-landing check.

(1) Ensure that the before-landing check is completed.

(2) Call out the before-landing check and announce when it is completed. The other crewmember will acknowledge that the before-landing check is complete.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Maintain a continuous coordinated turn to the crosswind or downwind leg and establish airspeed and altitude as required. Initiate the turn from downwind when in a position to make a continuous coordinated turn to the final approach course.

OVERWATER/SNOW/SAND CONSIDERATIONS (LIMITED CONTRAST AREAS): Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

Note. VMC flight maneuvers can be trained and evaluated completely separate from, or as components of, a traffic pattern.

1. Training will be conducted in the aircraft. For traffic pattern training, the recommended airspeed is 60 KIAS on upwind, crosswind and base legs and 80 KIAS on the downwind leg. The recommended R/C on the upwind and crosswind legs is 500 FPM. For NVG training in the traffic pattern, the recommended MAX airspeed is 80 KIAS, and the recommended MAX bank angle is 30°.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and DOD FLIP; General Planning.

TASK 1058

Perform Visual Meteorological Conditions Approach

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The crew will conduct a continuous reconnaissance by analyzing the winds, obstructions, and long axis of the landing area.

   b. The P* will remain focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance. The P* will announce when the beginning of the approach, whether the approach will terminate to a HVR or to the ground, the intended point of landing, and any deviation to the approach.

   c. The P will assist in clearing the aircraft, and provide adequate warning of traffic or obstacles. The P will acknowledge any intent to deviate from the approach and will announce when his attention is focused inside the cockpit.

2. Procedures. Evaluate the winds/suitability of the landing area. Select an approach angle that allows obstacle clearance while descending to the desired point of termination. Once the termination point is sighted and the approach angle is intercepted (on base or final), adjust the collective as necessary to establish and maintain a constant angle. Maintain entry airspeed until the rate of closure appears to be increasing. Above 50-feet AGL, maintain ground track alignment and the aircraft in trim. Below 50-feet AGL, align the aircraft with the landing direction. Progressively decrease the rate of descent and rate of closure until reaching the termination point (HVR or touchdown). If landing to a confined area, terminating the approach to the forward one-third of the landing area will minimize PWR requirements.

   a. To a HVR. The approach to a HVR may terminate with a full stop over the planned termination point, or continue movement to transition to hovering flight. Progressively decrease the rate of descent and rate of closure until an appropriate HVR is established over the intended termination point.

   b. To the surface. Proceed as for an approach to a HVR, except determine an approach angle that allows obstacle clearance while descending to the desired point of touchdown. The decision to terminate to the surface with zero speed or with forward movement will depend on aircraft loading, environmental, and surface conditions. Touchdown, with minimum lateral movement. After surface contact, ensure that the aircraft remains stable until all movement stops. Smoothly lower the collective to the full down position and neutralize the pedals and cyclic.

   c. Go-around. Perform a go-around if a successful landing is doubtful or if visual reference with the intended termination point is lost. Once climb is established, reassess the situation and develop a new course of action. HVR OGE PWR may be required in certain situations. Evaluate PWR required versus PWR AVAIL.

Note. Airspeed indications are unreliable below 20 knots.

Note. Steep approaches can place the aircraft in potential settling-with-PWR conditions. The crew must be familiar with diagnosing and correcting these situations.

MUD/MUSKEG/TUNDRA CONSIDERATIONS: Select a suitable area and terminate the approach to a 10-foot HVR over the intended touchdown point. Begin a vertical descent until the aircraft touches down. Check aircraft stability while lowering the collective. If the area is suitable, lower the collective to the full down position and neutralize the cyclic and pedals.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following:

1. Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. The rate of descent during the final 100 feet should be slightly less than during the day to avoid abrupt attitude changes at low altitudes. After establishing the descent, reduce airspeed to approximately 40 to 45 knots until apparent ground speed and rate of closure appear to be increasing. Progressively decrease the rate of descent and forward speed until termination.

2. Surrounding terrain or vegetation may decrease contrast and degrade depth perception during the approach. Before descending below obstacles, determine the need for artificial lighting.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft. 60 knots is recommended for entry airspeed.

2. Evaluation will be conducted in the aircraft. 60 knots is recommended for entry airspeed.

REFERENCES: Appropriate common references.

TASK 1062

Perform Slope Operations

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter, select suitable landing/takeoff area that does not exceed the aircraft lateral cyclic limits.

STANDARDS: Apply appropriate common standards and maintain heading ±5°.

DESCRIPTION:

1. Crew actions.

   a. The P* will remained focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance. The P* will announce his intent to perform a slope operation and should be aware of the common tendency to over control the aircraft during slope landings.

   b. The P will assist in clearing the aircraft and will provide adequate warning of obstacles, drift, or altitude changes. The P will assist in confirming the suitability of the intended landing area and will announce when attention is focused inside the cockpit.

2. Procedures.

   a. Landing. Select a suitable area for slope operations that appears to not exceed slope limitations. The degree of the slope should not be so great as to create a need for large cyclic inputs. If possible, orient the aircraft into the wind. Select a reference to determine the roll angle during the execution of the maneuver. Announce the initiation of the slope landing. Smoothly lower the collective until the upslope skid contacts the ground. Adjust the cyclic to maintain the aircraft in a level attitude while maintaining heading with the pedals. Coordinate the collective and cyclic to control the rate of attitude change to lower the down slope skid to the ground. With the entire WT of the aircraft on the ground, (collective in the full down position) neutralize the cyclic and pedals. If cyclic or aircraft slope limits are reached before the aircraft is firmly on the ground, return the aircraft to a HVR. Select a new area where the slope is less steep and attempt another slope landing.

   b. Takeoff. Before takeoff, the P* will announce his intent and direct his attention outside. Apply the cyclic into the slope to maintain the position of the upslope skid. The P* will smoothly increase the collective to raise the down slope skid while maintaining heading with the pedals. Continue to raise the collective, maintain heading with the pedals, and simultaneously adjust the cyclic to level the aircraft laterally. As the aircraft leaves the ground, adjust the cyclic to accomplish a vertical ascent to a HVR with minimum drift.

Note. Before conducting slope operations, the crew must understand dynamic rollover characteristics.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. The degree of slope is difficult to determine using the NVG. Select reference points to determine slope angles. (References probably will be limited and difficult to ascertain.) If successful completion of the landing is doubtful at any time, abort the maneuver. Both crewmembers should focus outside the cockpit.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

GENERAL SLOPE CONSIDERATIONS:

1. A helicopter is susceptible to a lateral rolling tendency called dynamic rollover. This dynamic rollover can occur on level ground, but is more critical during slope or crosswind landing and takeoff maneuvers. Each helicopter has a critical rollover angle beyond which recovery is impossible. If the critical rollover angle is exceeded, the helicopters will rollover on its side, regardless of cyclic corrections introduced by the aviator. The rate of the rolling motion is also critical. As the roll rate increases, it reduces the critical rollover angle at which recovery is still possible.

2. When conducting slope operations with one skid on the ground acting as a pivot point, cyclic control is slow to respond due to the design and narrow CG range of the semi-rigid rotor system on the OH-58A/C and the TH-67. Collective is more effective in controlling any rolling moment that may develop since it controls main rotor thrust. Should the aircraft develop an upslope rolling motion, a smooth moderate collective reduction will reduce the roll rate. Care must be exercised to not "dump" the collective as this will result in a large rolling motion causing the down slope skid to contact the ground abruptly. The rate of motion may cause a roll or pivot about the down slope skid.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1070

Respond to Emergencies

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter or orally given the indications of an emergency condition or specific malfunction.

STANDARDS: Apply appropriate common standards and the following:

1. Recognize, announce, and analyze indications of an emergency. Perform or describe all immediate action procedures in TM 1-1520-228-CL, TM 55-1520-228-10; TH-67 operators supplement CL or TH-67 operators supplement.
2. Perform or describe the appropriate emergency procedure.
3. Make mayday call, lock shoulder harness, and tune transponder to emergency if required based on type of emergency.

DESCRIPTION:

1. Crew actions. When either crewmember detects an emergency situation, he will immediately alert the other crewmember.
   a. The P* will perform or direct the P to perform the underlined steps in TM 55-1520-228-10 or TH-67 operators supplement and will initiate the appropriate type of landing when required for the emergency.
   b. The P will perform as directed or briefed. If time permits, the P will perform all emergency checks with TM 1-1520-228-CL or TH-67 operators supplement CL and will request appropriate emergency assistance as described in the FIH.
2. Procedures. At the first indication of a warning/caution/advisory message, abnormal aircraft noise, and/or odor make an announcement. Identify the malfunction and perform the appropriate emergency procedure.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft, or academically.
2. Evaluation may be conducted in the aircraft, or academically.

REFERENCES: Appropriate common references.

TASK 1072

Respond to Engine Failure at a Hover

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with an IP; in an approved touchdown area and at HVR altitude that does not exceed 5 feet.

STANDARDS: Apply appropriate common standards and the following:

1. Execute the appropriate immediate action steps.
2. Do not allow lateral drift to exceed 3 feet.
3. Execute touchdown with no rearward drift.

DESCRIPTION:

1. Crew actions.

   a. The IP will confirm suitability of the landing area and comply with Army regulations and local requirements prior to initiating the maneuver. The IP will announce "HVRING AUTO" when retarding the throttle and will monitor the position of the aircraft and take corrective action if necessary.

   b. Upon detecting engine failure, the P* will focus outside the aircraft and adjust the flight controls as necessary to land.

   c. The P will assist the P* as directed.

2. Procedures.

   a. Upon detecting engine failure, maintain heading with the pedals and correct any lateral or rearward drift with the cyclic. If the maneuver is initiated while the aircraft is moving forward over a smooth or prepared surface, adjust the cyclic to attain a landing attitude while avoiding a tail low condition. Make ground contact with some forward speed.

   b. When the helicopter is resting firmly on the ground, smoothly lower the collective to the full down position while simultaneously neutralizing the pedals and cyclic.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following: Select an area with good contrast and several good reference points to assist in maintaining present position.

SNOW/SAND/ DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1074

Respond to Engine Failure at Cruise Flight

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with an IP; minimum entry altitude; and termination as directed (PWR recovery, terminate with PWR or touchdown).

STANDARDS: Apply appropriate common standards and the following:

1. Recognize the emergency, determine the appropriate corrective action, and perform as required, from memory, all immediate action procedures described in TM 1-1520-228-CL, TM 55-1520-228-10, the TH-67 operators supplement CL or the TH-67 operators supplement.
2. Select a suitable landing area.
3. Correctly terminate the maneuver as directed by the IP.

DESCRIPTION:

1. Crew actions.

   a. The IP will confirm suitability of the landing area and comply with Army regulations and local requirements prior to initiating the maneuver. The IP will announce "SIMULATED ENGINE FAILURE" when he retards the throttle and will monitor the position of the aircraft and take corrective action if necessary.

   b. Upon detecting engine failure, the P* will focus outside the aircraft and adjust the flight controls as necessary to land.

   c. The P will assist the P* as directed.

2. Procedures. Upon detecting engine failure, the P* will lower the collective to maintain rotor revolutions per minute (RPM) within limits while simultaneously adjusting the pedals to trim the aircraft. The P* will select a suitable landing area. The P* will also use turns and vary the airspeed between minimum rate of descent and MAX 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. The P* will complete or simulate emergency procedures outlined in TM 1-1520-228-CL, TM 55-1520-228-10, TH-67 operator's supplement CL or TH-67 operators supplement. If time permits, the P* will direct the P to verify the procedures. The crew should plan each simulated forced landing as continuing to the ground. With the aircraft in a safe autorotative profile, the IP will state one of the three commands described below prior to descending below 400 feet AGL and smoothly advance the throttle to the full open position for the PWR recovery and terminate with PWR maneuvers.

   a. PWR recovery. Upon receiving the command "PWR recovery," the P* will maintain trim with pedals and continue autorotative descent as the IP confirms normal operating RPM by throttle pressure and by visually checking that the N^2 RPM is at 100%. When operating RPM has been confirmed, the P* will apply sufficient collective to establish a normal climb. The P* will complete the recovery prior to reaching 200 feet AGL.

   b. Terminate with PWR. Upon receiving the command "terminate with PWR," the P* will continue the autorotative descent. The IP will confirm normal operating RPM with throttle pressure and visually checking that the N2 RPM is at 100% prior to reaching 200 feet AGL. The P* will trim the aircraft with the pedals, and continue autorotative descent. During the final portion of the approach, the P* will apply sufficient PWR and collective pitch to decrease the rate of descent to zero at 3 to 5 feet AGL with the aircraft in a landing attitude. The airspeed at this point should be the same as if an actual touchdown were to be effected. The P* will maintain proper trim throughout the maneuver with the pedals, and maintain an altitude of 3 to 5 feet until the aircraft is brought to a stationary HVR.

Note. If time permits during the descent, the IP will announce, "THROTTLE CONFIRMED" when certain that the engine is back to operating RPM.

Note. It is the IP's responsibility to manipulate the throttle during this task. However, provisions should be made during the crew briefing to allow the P* (as a back-up) to verify the throttle is full open. IP candidates will be briefed and trained to restore the throttle to the full open position.

c. Touchdown. The IP may elect to continue the maneuver and terminate with a touchdown autorotation. In this case, the IP will not restore the throttle to the full open position. (Emergency procedure training criteria outlined in AR 95-1 and steady state autorotation criteria from TASK 1082 must be met before performing touchdown autorotations.)

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following: Altitude, apparent ground speed, rate of closure, and rate of descent are difficult to estimate during night and NVG flight modes. Aircraft altitude and rate of descent should be closely monitored by both the P* and the P.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1076

Respond to Hydraulic System Malfunction

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with an IP, with emergency procedures training criteria outlined in AR 95-1 met, and given entry altitude and airspeed.

STANDARDS: Apply appropriate common standards and the following:

1. Execute emergency procedures for hydraulic failure IAW TM 55-1520-228-10; or the TH-67 operator's supplement.
2. Maintain a constant shallow approach angle.

DESCRIPTION: Crew actions/procedures.

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 CL.
2. When a shallow approach angle is intercepted, the P* 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. The P* will progressively decrease the airspeed and rate of descent to touch down at, or slightly above, ETL. 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.

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

Note. During training, plan the approach to the first one third of the landing area.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1082

Perform Autorotation

CONDITIONS: In an OH-58A/C or in a TH-67 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: Apply appropriate common standards and the following:

1. Determine the correct entry point.
2. Make the required verbal call outs at the proper time.
3. Establish 60 KIAS, +10, –5 KIAS before reaching 100 feet AGL.
4. Perform a smooth, progressive deceleration.
5. Apply initial pitch at approximately 10 feet AGL (skid height), ±3 feet.
6. Maintain heading alignment at touchdown ±10.

DESCRIPTION: Crew actions/procedures.

1. The P* will maintain entry altitude and airspeed as directed until reaching the entry point. The P* 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. The P* 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 attitude. The P* 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, the P* will execute a PWR recovery or terminate with PWR, as appropriate. A steady-state autorotation means that—
   - Rotor RPM is within limits.
   - The aircraft is at the correct airspeed.
   - The aircraft is descending at a normal rate.
   - 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. The P* will maintain aircraft alignment with the touchdown area by properly applying the pedals and the cyclic. The P* 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, the P* will slowly lower the collective to the full-down position while maintaining ground track alignment with the cyclic and pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.
3. The crewmember not on the controls will assist the P* as directed. The crewmember will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following: Attitude control is critical during night autorotations. Reduced visual references at night limit 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.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1155

Negotiate Wire Obstacles

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. Locate and determine the height of wires.
2. Determine the method to (under flight or over flight) negotiate the wire obstacle.

DESCRIPTION:

1. Crew actions.

   a. The PC will determine if under flight of the wire obstacles will be performed.

   b. The P* will focus his primary attention scanning outside the aircraft and will confirm visual contact with wires and supporting structures. The P* is responsible for clearing the aircraft and obstacle avoidance.

   c. The P will assist clearing the aircraft and will announce adequate warning to avoid hazards, wires, and poles or supporting structures. The P also will announce when the aircraft is clear, and when focused inside the aircraft.

2. Procedures.

   a. Plot known wire hazards and other obstacles on tactical/navigation maps. During the mission, search for wires and other hazards to flight.

   b. Announce when wires/obstacles are seen and specify the direction and distance to them.

   c. Accurately determine the amount of clearance between the wires and the ground. Locate guy wires and supporting poles. Determine the method of negotiating the wires and initiate the maneuver.

      (1) Over flight. Identify the top of the pole and the highest wire. Cross near a pole to aid in estimating the highest point. Minimize the time that the aircraft is unmasked.

      (2) Under flight. When crossing under wires, the lowest point of the wire must be at least 20 feet plus HVR height above the ground. This means if hovering at 5 feet above the ground or obstacles, the lowest point of the wire must be 25 feet above the ground or obstacles. Ground speed will be as appropriate for given conditions. Ensure lateral clearance from guy wires and poles.

Note. The crew must maintain proper scanning techniques to ensure obstacle avoidance and aircraft clearance.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations and the following: For training, under flight of wires will not be performed unless the location has been checked during daylight conditions and all hazards have been identified. Both crewmembers should be focused outside the cockpit.

SNOW/SAND/ DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1170

Perform Instrument Takeoff

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with reference to the flight instruments only.

STANDARDS: Apply appropriate common standards and the following:

1. Set attitude indicator. OH-58A and TH67: on the horizon; OH-58C: 5 above the horizon.)
2. Maintain required takeoff PWR ±2% TQ.
3. Maintain accelerative climb attitude ±1 bar width.
4. Maintain aircraft in trim after ETL.

DESCRIPTION:

1. Crew actions.

   a. The P* will focus primarily inside the aircraft on the instruments. The P* will follow the heading/course, altitude, issued by ATC/P. The P* will announce any deviation not directed by ATC/P and acknowledge all navigation directives.

   b. The P will assist the P* by warning of drift or excessive roll of the aircraft. The P will verify climb and airspeed and assist the P* as necessary to prevent fixation and spatial disorientation. The P will perform duties as directed and acknowledge any unannounced deviations. During IMC, the P will remain focused outside the aircraft to provide adequate warning for avoiding obstacles and hazards detected.

2. Procedures.

   a. From the ground. Align the aircraft with the desired takeoff heading. Set/confirm 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 controls for proper response. Apply pressure and counter-pressure on the pedals to ensure the aircraft is free to ascend. While referring to the flight instruments, smoothly increase the collective to obtain takeoff PWR. As the collective is increased, cross-check the attitude indicators to ensure proper attitude and constant heading. When takeoff PWR is reached and the altimeter shows a positive climb, adjust the pitch attitude 2 bar-widths below the horizon for the initial acceleration. Maintain heading with pedals until airspeed increases (generally 20 to 30 KIAS) and then make the transition to coordinated flight. Upon reaching climb airspeed (approximately 60 KIAS), adjust the controls as required to maintain desired climb airspeed.

   b. From a HVR. On the runway or takeoff pad, align the aircraft with the desired takeoff heading. Set/confirm the attitude indicator for takeoff and check the controls for proper response. Establish the aircraft at 3 foot HVR. Initiate the takeoff by smoothly and steadily increasing the collective until takeoff PWR is reached. Simultaneously adjust pitch attitude as necessary to establish initial accelerative climb attitude. Visually maintain runway clearance and alignment on takeoff until the aircraft accelerates through ETL. At that time the P* will direct attention to the flight instruments and establish an instrument cross check.

Note. Takeoff PWR will normally be 10% above TQ required for HVR.

Note. Practicing this task at night provides greater benefit since external cues are less visible.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 1172

Perform Radio Navigation

CONDITIONS: With the appropriate navigational publications, in an OH-58A/C or in a TH-67(I) model helicopter under IMC.

STANDARDS: Apply appropriate common standards and the following:

1. P*.
   a. Correctly determine aircraft position.
   b. Correctly intercept and maintain the desired course.
   c. Correctly identify station passage.
2. P.
   a. Without error, request, acknowledge, and record ATC clearance information.
   b. Without error, tune and identify the appropriate NAVAIDs with the aid of the navigational chart.
   c. Correctly determine the position of the aircraft and station passage.

DESCRIPTION: Crew actions.

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 3-04.240 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 IAW the procedures in FM 3-04.240.
   d. Course interception. After identifying the desired station, determine the location of the aircraft in relation to the desired course. Turn the aircraft 45° toward the course (90° 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° toward the course to re-intercept. If navigational instruments do not indicate movement toward the course within a reasonable time, increase the intercept angle. When the course is re-intercepted, turn 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 IAW the procedures in FM 3-04.240.
   g. Station passage. Identify station passage by observing the first complete reversal of the indicator needle or the TO-FROM indicator.
2. P assists 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.

NIGHT CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft under simulated IMC or actual IMC.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, DOD FLIP, and general planning publication.

TASK 1174

Perform Holding Procedures

CONDITIONS: In an OH-58A/C or TH-67 helicopter under simulated IMC or actual IMC in the TH-67(I), and given an altitude, holding instructions, and appropriate navigational publications.

STANDARDS: Apply appropriate common standards and the following:

1. Correctly tune and identify the appropriate NAVAIDS.
2. Correctly enter the holding pattern.
3. Correctly time and track holding pattern legs.

DESCRIPTION: Crew actions/procedures.

1. Before arrival at the holding fix, the crew 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.
2. Crew will check the inbound course. Maintain the outbound heading per the DOD FLIP or as directed by ATC.
3. After the appropriate time outbound, the P* will 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.
4. The P will assist the P* as directed.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203 and FM 3-04.240.

TASK 1176

Perform Nonprecision Approach

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter under simulated IMC or actual IMC for the TH-67(I) and with the appropriate DOD FLIP and the approach clearance received.

STANDARDS: Apply appropriate common standards and the following:

1. P*.
   a. Execute the approach IAW AR 95-1, FM 3-04.240, and the DOD FLIP.
   b. Maintain prescribed courses as follows:
      (1) Non-directional (radio) beacon (NDB) courses: ±5°.
      (2) Very high frequency Omni-directional range (VOR) radio beacon courses: Within a 1/2 scale deflection of the course deviation indicator (CDI) or ±5° using the radio bearing and heading indicator.
      (3) Location courses: Within a full-scale deflection of the CDI.
   c. During airport surveillance radar approaches, make immediate heading and altitude changes issued by the ATC and maintain heading ±5°.
   d. Comply with descent minimums prescribed for the approach.
   e. Execute the correct missed approach procedure immediately upon reaching the missed approach point (MAP) if a landing cannot be accomplished.
2. P.
   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.

DESCRIPTION:

1. Crew action. The P* will perform the approach as described in FM 3-04.240. The P will assist the P* by—Tuning the avionics to the proper frequencies and providing the instrument approach minimums listed in the DOD FLIP.
2. Procedure.
   a. Maintain COMM with ATC and recording ATC information when appropriate.
   b. Keep a sharp lookout and informing the aviator immediately of any observed aircraft by using clock positions, distance, and the terms “high,” “low,” or “level.”
   c. Announce the minimum decision altitude and performing other duties as requested by the P*.

> ***Note.*** The P must notify the P* and receive acknowledgement before changing frequencies or tuning the NAVAIDs.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203, and FM 3-04.240.

TASK 1178

Perform Precision Approach

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter under simulated IMC or actual IMC for the TH-67(I) and with the appropriate DOD FLIP and the approach clearance received.

STANDARDS: Apply appropriate common standards and the following:

1. Perform the approach IAW AR 95-1, FM 3-04.240, and the DOD FLIP.
2. Maintain heading ±5°.
3. Make immediate corrections issued by ATC.
4. Comply with descent minimums prescribed for the approach.
5. Execute the correct missed approach procedure immediately upon reaching the MAP if a landing cannot be accomplished.
6. 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.

DESCRIPTION: Crew actions/procedures.

1. The P* will focus primarily inside the aircraft on the instruments and perform the approach. The P* will follow the heading/course, altitude, and missed approach instructions issued by ATC/P.
2. The P* will announce any deviation not directed by ATC/P, and will acknowledge all navigation directives. If visual contact with the landing environment is not made at decision height (DH), he will announce and execute a missed approach.
3. The P will perform duties as directed by the P*. The P will call out the approach procedure to the P* and acknowledge any unannounced deviations. The P will correctly tune and identify the appropriate NAVAIDs. The P will monitor outside for visual contact with the landing environment and will complete the approach as briefed if VMC are encountered. During simulated IMC, the P will remain focused outside the aircraft to provide adequate warning for avoiding obstacles and hazards detected. The P will announce when his attention is focused inside the cockpit.
4. Follow all ATC instructions. If compliance with ATC is not possible, inform them. Review approach and missed approach instructions before initiating the task. Conduct co-pilot briefing and designate crew responsibilities for the approach.

Note. FM 3-04.240 describes approach procedures.

Note. In the initial call to ATC advise them if the aircraft is equipped with any NAVAID receivers.

Note. Practicing this task at night provides greater benefit since external cues are less visible.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.240.

TASK 1182

Perform Unusual Attitude Recovery

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter, with reference to flight instruments only, with an IE, or IP.

STANDARDS: Apply appropriate common standards and the following:

1. Analyze aircraft attitude.
2. Without delay, use correct recovery procedures in the proper sequence.
3. Recover with minimum loss of altitude.

DESCRIPTION:

1. Crew actions.

   a. The P* will remain focused inside the aircraft during recovery if IMC. The P* will advise the P if the P* detects an unusual attitude and request assistance. The P* will be prepared to relinquish the controls if necessary.

   b. The P is responsible for clearing the aircraft and obstacle avoidance. The P will monitor the aircraft attitude and the P*, to help detect an unusual attitude. The P will assist in monitoring the aircraft instruments and call out attitude, TQ and trim. The P will provide adequate warning for corrective action if aircraft operating limitations may be exceeded. The P will be prepared to take the controls if needed and will report any deviation from the assigned altitude to ATC.

2. Procedures. Upon detecting an unusual attitude, immediately initiate a recovery to straight and level flight by—

   a. Attitude. Establishing a level bank and pitch attitude.

   b. Heading. Establishing and maintaining a heading.

   c. TQ. Adjusting the TQ to the appropriate setting.

   d. Airspeed. Establishing and maintaining the appropriate airspeed.

   e. Trim. Trimming the aircraft.

Note. Practicing this task at night provides greater benefit since external cues are less visible.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATION:

1. Apply appropriate common considerations and the following:

2. IMC is not a prerequisite for an unusual attitude. During NVG operations, video noise may contribute to loss of visual cues.

SNOW/SAND/DUST CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Obscurants other than weather can induce loss of visual contact. At low altitudes, where these conditions would be encountered, it is extremely important that these procedures be initiated immediately to prevent ground contact. Communication in the cockpit is essential.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203, FM 3-04.240, and TC 3-04.93.

TASK 1184

Respond to Inadvertent Instrument Meteorological Conditions

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft operator's manual/CL or orally in a classroom environment.

STANDARDS: Apply appropriate common standards and the following:

1. Maintain aircraft control and make the transition to instrument flight immediately.
2. Initiate a climb immediately (if necessary) to appropriate altitude.
3. Comply with all ATC procedural instructions, local regulations, and SOP.

DESCRIPTION: Crew actions/procedures.

1. If IIMC is encountered, the following steps will be accomplished:
   a. Announce "inadvertent IMC" (P/P*).
   b. Transition to instrument flight (P/P*).
   c. Begin recovery procedures.
      (1) Attitude. P* levels the wings on the attitude indicator. P will monitor.
      (2) Heading. P* will announce and maintain the current heading; turning only to avoid known obstacles. The P will monitor.
      (3) TQ. P* will announce and adjust the TQ to climb/cruise PWR as appropriate. The P will monitor.
      (4) Airspeed. P* will adjust and announce the desired airspeed to climb or cruise as appropriate. The P will monitor.
      (5) Trim. P* will maintain the aircraft in trim.
2. After aircraft control is established.
   a. P sets the transponder to emergency.
   b. Complete the recovery procedure per local regulations and policies (P/P*).

Note. The P shall tune the radios to the appropriate frequencies, make the appropriate radio calls, and request ATC assistance, acknowledge and record ATC information.

Note. The P* announces if disoriented and unable to recover. The P may need to take the controls and implement recovery procedures.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATION:

1. Apply appropriate common considerations.
2. The NVG may be removed or flipped up once stable flight is established. When using NVG, it may be possible to see through thin obscuration (for example, fog and drizzle) with little or no degradation. It may be beneficial for the P not to completely remove NVG. The NVG may assist in recovery by allowing the P to see through thin obscuration that would otherwise prevent him from seeing the landing environment.

Note. Once committed to IMC do not attempt to regain VMC until the aircraft is under control. Rapid changes in attitude and bank angle can induce spatial disorientation causing loss of aircraft control.

Note. Practicing this task at night provides greater benefit since external cues are less visible.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203, FM 3-04.240 and TC 3-04.93.

TASK 1321

Perform Anti-Torque Malfunction

CONDITIONS: In an OH-58A/C or in a TH-67 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: Apply appropriate common standards and the following:

1. Maintain a constant approach angle.
2. Maintain ground track alignment with the landing direction.
3. Maintain landing area alignment at touchdown ±10°.
4. Perform a smooth, controlled termination.

DESCRIPTION: Crew actions/procedures.

1. Right pedal setting (Low TQ).

   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 PWR set as necessary to maintain level flight at 60 KIAS. The IP will then establish an out of trim condition a MAX of 10° to the right of the aircraft heading, not to exceed 20° from the runway heading. After intercepting a shallow approach angle, the P*will adjust the collective as necessary to maintain the angle. The P* will maintain entry airspeed until the apparent ground speed and the rate of closure appear to be increasing. The P* 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 the minimum airspeed for directional control. The P* 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, the P* 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, the P* will reduce the collective to the full-down position and neutralize the pedals and the cyclic.

2. Left pedal setting (High TQ).

   a. On base leg, the P* will descend to the appropriate altitude and decelerate to 60 KIAS. On final, the P* will ensure that the aircraft is at the proper altitude and airspeed and in trim with PWR set as necessary to maintain level flight at 60 KIAS. The IP will then establish an out of trim condition a MAX of 10° to the left of the aircraft heading, not to exceed 20° from the runway heading. After intercepting a shallow approach angle, the P* will adjust the collective as necessary to maintain the angle. The P* will also maintain entry airspeed until the apparent ground speed and the rate of closure appear to be increasing. The P* 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 PWR required to maintain altitude.)

   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, the P* 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, the P* will reduce the collective to the full-down position and neutralize the pedals and the cyclic.

Note. The crewmember not on the controls will assist the P* as directed.

Note. The airspeed indicator may be unreliable during anti-torque maneuvers.

Note. 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. 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 NIGHT VISION GOGGLES CONSIDERATION: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft. For training the Right (Low PWR) Anti-Torque, the "Minimum Airspeed for Directional Control" will be the speed that does not allow the aircraft heading to yaw more than 30° from the landing direction.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, TM 55-1520-228-10 TH-67 operator's supplement, and FM 3-04.203.

TASK 1323

Perform Hovering Autorotation

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with an IP, with the aircraft headed into the wind, and in an approved touchdown area.

STANDARDS: Apply appropriate common standards.

DESCRIPTION: Crew actions/procedures.

1. From a stabilized 3-foot HVR, the P* will retard the throttle to the engine idle stop. (While retarding the throttle, do not raise or lower the collective.)
2. Apply the right pedal to maintain heading and adjust the cyclic to maintain the position of the aircraft over the ground. As the helicopter settles, apply sufficient collective to make a smooth descent and touchdown. Do not stop the descent by over applying the collective; be alert for lateral or rearward drift.
3. When the helicopter is resting firmly on the ground, smoothly lower the collective to the full-down position while simultaneously neutralizing the pedals and the cyclic.

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

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.
2. Orient on areas of good contrast to help maintain the position of the aircraft over the ground.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references AR 95-1, TM 55-1520-228-10, TH-67 operator's supplement and FM 3-04.203.

TASK 1327

Perform Low -Level Autorotation

CONDITIONS: In an OH-58A/C or in a TH-67 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: Apply appropriate common standards and the following:

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 approximately 10 feet AGL (skid height) ±3 feet.
6. Maintain trim above 50'AGL and landing alignment below 50' AGL +/-10°.
7. Perform a smooth, controlled termination.

DESCRIPTION: Crew actions/procedures.

1. On base leg, the P* will establish an angle of descent to arrive at an altitude of 50 feet above the highest obstacle (AHO) (or as directed) just prior to reaching the entry point. During the descent, the P* 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 PWR applied.

2. The P* will simultaneously lower the collective, retard the throttle to the engine-idle stop, and apply aft cyclic to maintain entry altitude. The P* 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, the P* will decelerate as in a standard autorotation and maintain aircraft in trim until reaching 50' AGL. Below 50'AGL, the P* will align the aircraft with the touchdown area by properly applying the pedals and the cyclic.

3. The P* 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 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 cyclic and pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.

Note. The PI will assist the P* as directed. The PI will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.
2. Attitude control is critical during night autorotation(s), especially at entry. Reduced visual references at night limit the aviator's ability to estimate airspeed, altitude, and alignment with the touchdown area.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references AR 95-1, TM 55-1520-228-10, TH-67 operator's supplement, and FM 3-04.203.

TASK 1333

Perform Low -Level /Low -Airspeed Autorotation

CONDITIONS: In an OH-58A/C or in a TH-67 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: Apply appropriate common standards and the following:

1. Establish entry altitude as directed ±5 feet.
2. Establish entry airspeed 60 KIAS, ±5 KIAS.
3. Determine the correct entry point.
4. Apply initial pitch at approximately 10 feet AGL (skid height), ±3 feet.
5. Maintain heading alignment throughout maneuver ±10.
6. Perform a smooth, controlled termination.

DESCRIPTION: Crew actions/procedures.

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 prior to reaching the entry point. During the descent, the P* 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 PWR applied to sustain level flight.

2. The P* will simultaneously lower the collective and retard the throttle to the engine-idle stop.. Time permitting, the P will visually check gas producer and rotor RPM. The P* will align the aircraft with the touchdown area with the pedals. As the aircraft begins to descend, he will initiate a smooth deceleration and continue the maneuver as in the termination of a standard autorotation.

3. 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, the P* will adjust the cyclic to attain a level landing attitude and apply collective as necessary to cushion the landing.

4. After the aircraft touches down, the P* will slowly lower collective to the full-down position while maintaining ground track alignment with the cyclic and pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.

> ***Note.*** The PI will assist the P* as directed. The PI will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.
2. Attitude control is critical during night autorotations, especially at entry. Reduced visual references at night limit the aviator's ability to estimate airspeed, altitude, and alignment with the touchdown area.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references AR 95-1, TM 55-1520-228-10, TH-67 operator's supplement, and FM 3-04.203.

TASK 1335

Perform Autorotation with Turn

CONDITIONS: In an OH-58A/C or in a TH-67 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: Apply appropriate common standards and the following:

1. Determine the correct entry point.
2. Make the required verbal call outs at the proper time.
3. Maintain a 60-knot attitude during the turn.
4. Complete the final turn and align the aircraft with the landing area before reaching 200 feet AGL.
5. Establish 60-knot airspeed, +10/-5 KIAS, before reaching 100 feet AGL.
6. Perform a smooth, progressive deceleration.
7. Apply initial pitch at approximately 10 feet AGL (skid height), ±3 feet.
8. Maintain heading alignment at touchdown ±10°.
9. Perform a smooth, controlled termination.

DESCRIPTION: Crew actions/procedures.

1. The P* will maintain entry altitude and airspeed as directed until reaching the entry point. The P* 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.

2. The P* will smoothly apply the cyclic to attain a 60-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. The P* 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, the P* will ensure that a steady-state autorotation is attained. If it is not attained, the P* will execute a go-around or terminate with PWR 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.

3. At approximately 50 feet AGL, the P* will apply aft cyclic to initiate a smooth, progressive deceleration. The P* will align the aircraft 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, 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, the P* will adjust the cyclic to attain a level landing attitude and apply the collective as necessary to cushion the landing.

4. After touchdown, the P* will slowly lower the collective to the full-down position while maintaining ground track alignment with the cyclic and pedals. When the aircraft comes to a complete stop, the P* will neutralize the pedals and the cyclic.

Note. The PI will assist the P* as directed. The PI will monitor the aircraft instruments and advise the P* if any unsafe condition develops.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Attitude control is critical during night autorotations. Reduced visual preferences at night limit 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.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references AR 95-1, TM 55-1520-228-10, TH-67 operator's supplement and FM 3-04.203.

TASK 1400

Perform Maximum Performance Takeoff

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft operator's manual/CL with HVR PWR checks completed and OGE PWR AVAIL.

STANDARDS: Apply appropriate common standards and the following:

1. Maintain required takeoff PWR ±2% TQ.
2. Maintain 40 knot attitude until all obstacles are cleared.
3. Maintain aircraft in trim after passing through effective translational lift.

DESCRIPTION: Crew actions/procedures.

1. A takeoff that demands MAX performance from the helicopter is necessary because of various combinations of heavy helicopter loads, restricted performance due to high density altitudes, barriers that must be cleared and other terrain features. The decision to use either of the following takeoff techniques must be based on an evaluation of the conditions and helicopter performance.

2. Coordinated Climb Technique. Align the helicopter with the desired takeoff course at a stabilized 3-foot HVR, ± 1 foot. Apply forward cyclic pressure smoothly and gradually while simultaneously increasing collective to begin a coordinated acceleration and climb. Adjust pedal pressure as necessary to maintain the desired heading. MAX TQ AVAIL should be applied (without exceeding aircraft limits), as the helicopter attitude is established that will permit safe obstacle clearance. The climb out is continued at that attitude and PWR setting until the obstacle is cleared. After the obstacle is cleared, adjust helicopter attitude and collective as required to establish a climb at the desired rate and airspeed or transition to the desired mode of terrain flight. Continuous coordinated application of control pressures is necessary to maintain trim, heading, flight path, airspeed and R/C. The takeoff may be made from the ground by positioning the cyclic control slightly forward of neutral (40 knot attitude) prior to increasing collective.

3. Level Acceleration Technique. Align the helicopter with the desired takeoff course at a stabilized 3- HVR, ±1 foot. Apply forward cyclic pressure smoothly and gradually while simultaneously increasing collective to begin acceleration at approximately 3 to 5 feet skid height. Adjust pedal pressure as necessary to maintain the desired heading. MAX TQ AVAIL should be applied (without exceeding aircraft limits) prior to accelerating through effective translational lift. Additional forward cyclic pressure will be necessary to allow for a level acceleration to the desired airspeed. Approximately 5 knots prior to reaching the desired climb airspeed, gradually release forward cyclic pressure and allow the helicopter to begin a constant airspeed climb to clear the obstacle. Care must be taken not to decrease airspeed during the climb out, since this may result in the helicopter descending into the obstacle. After the obstacle is cleared, adjust helicopter attitude and collective, as required, to establish a climb at the desired airspeed. Continuous coordinated application of control pressures is necessary to maintain trim, heading, flight path, airspeed and R/C. Takeoff may be made from the ground by positioning the cyclic slightly forward of neutral, prior to increasing collective.

4. Comparison of Techniques. Where the two techniques yield the same distance over a 50-foot obstacle, the coordinated climb technique will provide a shorter distance over lower obstacles and the level acceleration techniques will provide a shorter distance over obstacles higher than 50 feet. The two techniques provide approximately the same distance over a 50-foot obstacle, when the helicopter can barely HVR OGE. As HVR capability is decreased, the level acceleration technique provides increasingly shorter takeoff distances when compared to the coordinated climb technique. In addition to the distance comparison, the main advantages of the level acceleration technique are as follows:

   a. It requires less or no time in the avoid area of the height velocity diagram.

   b. Performance is more repeatable, since reference to attitudes which change with loading and airspeed is not required.

c. At the higher climb out airspeeds (30 KIAS or more), reliable indicated airspeeds are AVAIL for accurate airspeed reference from the beginning of the climb out, therefore minimizing the possibility of aircraft settling into the obstacle.

d. The main advantage of the coordinated climb technique is that the climb angle is established early in the takeoff and more distance and time are AVAIL to abort the takeoff if the obstacle cannot be cleared. Additionally, large attitude changes are not required to establish the climb airspeed.

TRAINING AND EVALUATION REQUIREMENTS:

Note. For training, simulated MAX TQ will be HVR PWR plus -12% TQ.

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 1402

Perform Tactical Flight Mission Planning

CONDITIONS: Prior to a tactical flight in an OH-58A/C or in a TH-67 helicopter and given a mission briefing, navigational maps, or a navigational computer, and other materials as required.

STANDARDS:

1. Analyze the mission using the factors of mission, enemy, terrain and weather, troops and support available, time available, civil considerations (METT-TC).
2. Perform a map/photo reconnaissance using the AVAL map media, air mission planning system video map terminal, or photos. Ensure that all known hazards to terrain flight are plotted on the map or into the air mission planning system.
3. Select appropriate primary and alternate routes and enter all of them on a map, route sketch, or into the air mission planning system.
4. Select the appropriate terrain flight modes.
5. Determine the distance ±1 kilometer, ground speed ±5 knots, and ETE ±1 minute for each leg of the flight.
6. Determine the fuel required: OH-58 ±25 lbs, TH-67 ±3.7 lbs and reserve IAW AR 95-1.
7. Obtain and evaluate the weather briefing.
8. Perform risk assessment per unit SOP.
9. Conduct a thorough crew mission briefing IAW the unit SOP and Task 1000.

DESCRIPTION: Crew actions/procedures.

1. Analyze the mission using the factors of METT-TC. Conduct a map or aerial photo reconnaissance. Obtain a weather briefing that covers the entire mission. Include sunset and sunrise times, density altitudes, winds, and visibility restrictions. If the mission is to be conducted at night, the briefing should also include moonset and moonrise times, ambient light levels, if available. Determine primary and alternate routes terrain flight modes, and movement techniques.
2. Determine time, distance, and fuel requirements using the navigational computer or air mission planning system. Annotate the map, overlay, or air mission planning system with sufficient information to complete the mission. This includes waypoint (WPT) coordinates that define the routes for entry into the air mission planning system. Consider such items as hazards, checkpoints, observation posts, and friendly and enemy positions. Review contingency procedures.

> ***Note.*** The PC will ensure that all necessary tactical flight information is obtained and will conduct a thorough crewmember briefing in accordance with the unit SOP and Task 1000. The PC may delegate mission planning tasks to the other crewmember but retains overall responsibility for mission planning. The PC will analyze the mission in terms of METT-TC.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically.
2. Evaluation will be conducted academically.

REFERENCES: Appropriate common references, FM 3-04.203, Task 1000 and Task 1004.

TASK 1407

Perform Terrain Flight Takeoff

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with HVR PWR and before takeoff checks completed and the aircraft cleared.

STANDARDS: Apply appropriate common standards and the following:

1. Maintain aircraft alignment with takeoff direction until transitioning to the appropriate terrain flight mode.
2. Maintain PWR as required to clear obstacles safely.

DESCRIPTION:

1. Crew actions.

   a. The P* will remain focused primarily outside the aircraft during the maneuver. The P* will direct the other crewmember to maintain visual reference outside the aircraft to assist in clearing and will ensure that the aircraft is cleared and select reference points to assist in maintaining takeoff flight path. The P* will announce initiating the takeoff and whether the takeoff is from the ground or from a HVR and will also announce intentions to abort or alter the takeoff.

   b. The P will maintain visual reference outside the aircraft, acknowledge that he is ready for takeoff and provide adequate warning of any obstacles or hazards in the flight path.

2. Procedures.

   a. Determine the takeoff direction by analyzing the tactical situation, wind, long axis of the takeoff area, and the lowest obstacles. Select reference points to assist in maintaining the takeoff flight path. Coordinate the collective and cyclic controls as necessary to establish a climb angle that will clear any obstacles in the takeoff path.

   b. Maintain heading with the pedals and once the obstacles are cleared, smoothly adjust the flight controls to transition to the terrain flight mode.

Note. HVR OGE PWR is required for terrain flight takeoffs.

Note. When this maneuver is performed from a confined area, repositioning the aircraft downwind will minimize the PWR requirements on takeoff.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.
2. 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.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 1408

Perform Terrain Flight

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. Terrain flight mode.
   a. Nap of the earth (NOE) flight.
      (1) Fly as close to the earth's surface as vegetation, obstacles, and ambient light will permit.
      (2) Maintain airspeed appropriate for the terrain, enemy situation, weather and ambient light.
   b. Contour flight.
      (1) Maintain an altitude that allows safe clearance of obstacles while generally conforming to the contours of the earth.
      (2) Maintain airspeed appropriate for the terrain, enemy situation, weather and ambient light.
      (3) Maintain the aircraft in trim.
   c. Low-level flight.
      (1) Maintain altitude ±50 feet.
      (2) Maintain airspeed ±10 KIAS.
      (3) Maintain aircraft in trim.
2. Terrain flight navigation.
   a. During NOE flight.
      (1) Know the en route location within 200 meters.
      (2) Identify all checkpoints.
      (3) Locate the final objective within 100 meters.
   b. During low-level or contour flight.
      (1) Know the en route location within 500 meters.
      (2) Identify all checkpoints.
      (3) Locate the final objective within 100 meters.

DESCRIPTION:

1. Crew actions.
   a. The P* will remain focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance. The P* will acknowledge all navigational and obstacle clearance instructions given by the P. The P* will announce the intended direction of flight and any deviation from instructions given by the P.
   b. The P will provide adequate warning to avoid obstacles detected in the flight path or identified on the map. Duties permitting, the P will assist with clearing the aircraft and obstacle avoidance and will announce when attention is focused inside the cockpit.
2. Procedures.

a. Terrain flying involves flight close to the earth's surface. The modes of terrain flight are NOE, contour, and low-level. The crew will seldom perform pure NOE or contour flight. Instead, they will alternate techniques while maneuvering over the desired route. During terrain flight, the crew's primary concern is the threat and obstacle avoidance.

(1) Terrain flight mode. Terrain flight is conducted at one of, or a combination of, three distinct modes of flight as described below.

(2) NOE flight. NOE flight is conducted at varying airspeeds and altitudes as close to the earth's surface as vegetation, obstacles, and ambient light will permit.

(3) Contour flight. Contour flight is characterized by varying altitude and relatively constant airspeed, depending on vegetation, obstacles, and ambient light. It generally follows the contours of the earth.

(4) Low-level flight. Low-level flight is usually performed at a constant airspeed and altitude. It generally is conducted at an altitude that prevents or reduces the chance of detection by enemy forces.

Note. OGE HVR PWR is required for terrain flight.

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b. Terrain flight navigation. Terrain flight navigation requires the crew to work as a team. Remain primarily focused outside the aircraft. Acknowledge commands for heading and airspeed changes necessary to navigate the desired course. Announce significant terrain features and other cues to assist in navigation. Announce any verified or perceived hazards to flight and provide instructions and perform actions for obstacle/hazard avoidance. Change aircraft heading and airspeed as appropriate to navigate the desired course. Announce all plotted hazards prior to approaching their location. Use standardized terms to prevent misinterpretation of information and unnecessary cockpit conversation. The crew must look far enough ahead of the aircraft at all times to avoid hazards.

(1) During NOE flight, the crew identifies prominent terrain features that are located some distance ahead of the aircraft and which lie along or near the course. Using these points to key on, maneuver the aircraft to take advantage of the terrain and vegetation for concealment. If general navigational techniques do not apply, identify the desired route by designating a series of successive checkpoints. To remain continuously oriented, compare actual terrain features with those on the map.

(2) Contour navigation is less precise than NOE navigation because the contour route is more direct. It is also an effective technique to combine the use of terrain features and rally terms when giving directions. This will allow the P* to focus attention outside the aircraft.

(3) For low-level navigation, verify time and distance to fly specific headings and airspeeds.

Note. If the area permits, the crew should navigate at least 20 kilometers during NOE flight training or 40 kilometers during low-level or contour flight training.

Note. Each of the methods for stating heading information is appropriate under specific conditions. When a number of terrain features are visible and prominent enough for the P* to recognize them, the most appropriate method is navigation instruction toward the terrain feature in view. Navigation instructions toward a distant, unseen terrain feature are appropriate when few changes are anticipated. When forward visibility is restricted and frequent changes are necessary, controlled turning instructions are more appropriate. As a general rule, clock headings by themselves should be avoided. However, clock headings are recommended when associated with a terrain feature and with controlled turning instructions.

NIGHT AND NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

OVERWATER CONSIDERATIONS: Overwater flight, at any altitude, is characterized by a lack of visual cues and therefore, has the potential of causing spatial disorientation. Be alert to any unannounced changes in the flight profile and be prepared to take immediate corrective actions. The radar altimeter low altitude warning should be set to assist in altitude control. Hazards to terrain flight (for example, harbor lights, buoys, wires, and birds) must also be considered during overwater flight. When possible both crewmembers should be focused outside the cockpit.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 1409

Perform Terrain Flight Approach

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with the before landing check completed.

STANDARDS: Apply appropriate common standards and align the aircraft with a landing direction at or below 25' AHO until termination.

DESCRIPTION:

1. Crew actions.

   a. The P* will maintain visual reference outside the aircraft throughout the approach and landing (to include the go-around, if required). The P* will direct the P to maintain visual reference outside the aircraft to assist in clearing and announce intent to land, abort, or alter the approach. The P* will announce beginning of the approach when intercepting an angle that assures obstacle clearance. The P* will announce if the approach will terminate to a HVR or to the ground, intended landing area, and any deviation to the approach.

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

2. Procedure.

   a. Determine the landing direction by analyzing the tactical situation, wind, long axis of the landing area, and the lowest obstacles. Evaluate the suitability of the landing area. Select an approach angle that allows obstacle clearance while descending to the desired point of termination. Maneuver the aircraft as required (straight-in or circle) to intercept the desired approach path. Adjust the flight path and airspeed as necessary and maintain orientation of the landing area. Coordinate the collective and cyclic as necessary to maintain an approach angle to ensure obstacle clearance.

   b. Maintain entry airspeed until the rate of closure appears to be increasing. Above 25' AHO, maintain ground track alignment and the aircraft in trim. At 25'AHO and below, align the aircraft with the landing direction. Progressively decrease the rate of descent and rate of closure until reaching the termination point (HVR or touchdown). If landing to a confined area, terminating the approach to the forward one-third of the landing area will minimize PWR requirements.

Note. The decision to terminate at a HVR, 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. If at any time during the approach the P* loses visual contact or it becomes apparent he will lose visual contact with the intended landing area, the P* will inform the P and request assistance. If the P still has the intended landing area in sight, the P will take the controls and complete the approach. If the P does not have the intended landing area in sight, the P* will perform a go-around.

Note. HVR OGE PWR is required prior to a terrain flight approach.

Note. Movement over areas of limited contrast, such as tall grass, water, or desert, tends to cause spatial disorientation. Seek HVR areas that provide adequate contrast. If disorientation occurs, apply sufficient PWR 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.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

MUD/MUSKEG/TUNDRA CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 1411
Perform Terrain Flight Deceleration

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. Maintain tail rotor clear of all obstacles.
2. Decelerate to the desired airspeed, or to full-stop ±50 feet of the selected location.

DESCRIPTION:

1. Crew actions.

   a. The P* remains focused outside the aircraft and is responsible for clearing the aircraft and obstacle avoidance. The P* will announce intention to decelerate or come to a full stop, any deviation from the maneuver, and completion of the maneuver.

   b. The P will provide adequate warning to avoid obstacles detected in the flight path and will announce when attention is focused inside the cockpit.

   c. The crew must clear the area below the aircraft before descending.

2. Procedures.

   a. Consider variations in the terrain and obstacles when determining tail rotor clearance. With terrain and obstacle considerations made, increase the collective just enough to maintain the altitude of the tail rotor. (Initially increasing the collective may not be necessary at higher airspeeds.) Apply aft cyclic to slow down to the desired airspeed/ground speed or come to a full stop while adjusting the collective to maintain the altitude of the tail rotor.

   b. Maintain heading with the pedals and make all control movements smoothly. If the attitude of the aircraft is changed too much or too abruptly, returning the aircraft to a level attitude will be difficult and over controlling may result.

Note. OGE HVR PWR is required for terrain flight decelerations.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations.
2. Because of the limited field of view (FOV) of the NVG, avoid making abrupt changes in aircraft attitude. An extreme nose-high attitude limits the forward FOV. Maintain proper scanning techniques to ensure obstacle avoidance and tail rotor clearance.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 1472

Perform Aerial Observation

CONDITIONS: In an OH-58A/C or TH-67 helicopter or orally in a classroom environment.

STANDARDS: Apply appropriate common standards and the following:

1. Detect the target using visual search techniques.
2. Identify the target.
3. Locate the target.
4. Report the target as briefed.

DESCRIPTION:

1. Crew actions.

   a. The P* is responsible for clearing the aircraft and obstacle avoidance. The P* will maintain aircraft orientation and perform reconnaissance of assigned sector as duties permit.

   b. The P will operate the COMM systems. When scanning the area, the P should concentrate on avenues of approach while periodically scanning adjoining terrain. The P will select mutually supportive fields of view when working with other aircrews (This will ensure coverage of “dead spaces" that may exist in front of the aircraft). The P will perform reconnaissance of assigned sector and announce when attention is focused inside the cockpit. Duties permitting the P will assist the P* in clearing the aircraft.

2. Procedures.

   a. Visual/sensor search is the systematic search of a given area so that all parts of the area are observed or scanned. The purpose of visual/sensor search is to detect objects (targets) or activities.

      (1) Detection. Detection requires determination that an object or an activity exists.

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

      (3) Location. Determining the exact location of targets is the objective of the mission. Depending on the nature of the targets, the P may be able to locate the center of mass or the boundaries of the entire area with the laser range finder/designator.

      (4) 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.

   b. The ability of a crewmember 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.

      (1) Altitude. Higher altitudes offer greater visibility with less detail. Lower altitudes are usually used because of survivability considerations.

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

      (3) 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.

      (4) 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:

(a) Movement: The most easily detectable sign of enemy activity is movement. Movement may include disturbance of foliage, snow, soil, or birds

(b) Color. Colors in nature tend to be subdued. Look for colors that stand out against, and contrast with, natural backdrops.

(c) Light: Light is the best indicator of activity at night.

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

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

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

(g) Texture. Smooth surfaces, such as glass windows or canopies, will shine when reflecting light. Rough surfaces will not.

(h) Trails. Trails leading into an area should be observed for cues as to the type and quantity of traffic, and how recently it passed.

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

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

(a) The acquisition sector is the forward 45° area to each side of the center of the observation work sector. This is the primary area of search.

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

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

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.
2. Evaluation will be conducted in the aircraft or academically.

REFERENCES: Appropriate common references, FM 3-04.140, and FM 3-04.203.

TASK 1474

Respond to Night Vision Goggle Failure

CONDITIONS: In an OH-58A/C, TH-67 helicopter or orally, given a cue of impending or actual NVG failure**.**

STANDARDS: Apply the appropriate common standards and the following:

1. Identify or describe indications of impending/actual NVG failure.
2. Perform or describe emergency procedures for impending/actual NVG failure.

DESCRIPTION: Impending/actual NVG failure may be indicated by illumination of the low voltage indicator light. It also may be indicated by one or both tubes flickering, dimming, or shutting down. Crew actions/procedures:

1. P* will—

   a. Immediately announce "GOGGLE FAILURE" and, if necessary, begin a climb at a rate that will ensure obstacle avoidance.

   b. Transfer the flight controls if necessary.

   c. Attempt to restore the goggles. If NVG are restored, continue the mission. If not restored, lock the NVG in the up position and proceed as briefed.

2. P will—

   a. Immediately announce "GOGGLE FAILURE" and attempt to restore the goggles.

   b. If NVG are restored, continue the mission. If not restored, lock the NVG in the up position and proceed as briefed.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted academically or in the aircraft.
2. Evaluation will be conducted orally or in the aircraft.

REFERENCES: Appropriate common references and TM 11-5855-263-10.

TASK 2010

Perform Multi-Aircraft Operations

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given a unit SOP.

STANDARDS: Apply appropriate common standards and the following:

1. Participate in a formation flight briefing IAW unit SOP and the mandatory items IAW the multi-aircraft operations briefing CL.
2. Perform formation flight and techniques of movement as briefed.
3. React to loss of visual contact IAW unit SOP.

DESCRIPTION:

1. Crew actions.

   a. The P* will focus primarily outside the aircraft, maintaining contact with the other aircraft in the formation. The P* will announce any maneuver or movement before execution and inform the P if visual contact is lost with other aircraft. If visual contact is lost with other the aircraft, the crew will immediately notify the flight and begin reorientation procedures. If IMC are encountered execute IIMC breakup as briefed.

   b. The P will provide adequate warning of traffic or obstacles detected in the flight path and/or identified on the map. The P will assist in maintaining aircraft separation. The P will inform the P* if visual contact is lost with other the aircraft, and if threat elements are detected or sighted. The P will perform duties as briefed and will notify the P* when attention is focused inside the aircraft. The P should frequently assist the P* by communicating his situational awareness perceptions and formation/multi-ship observations. Additionally the P should assist the P* by monitoring aircraft systems, operating the navigation system, and by scanning the air route for possible enemy activity or other hazards and obstacles that could impact the integrity and security of the flight.

   Note. The most important consideration when an aircraft has lost visual contact with the flight is immediately notify the flight and execute reorientation procedures. Except for enemy contact, all mission requirements are subordinate to this action.

2. Procedures. Maneuver into the flight formation, changing position as required. Maintain horizontal and vertical separation for the type of formation being flown. If the tactical situation requires, perform techniques of movement as briefed. The following procedures will be performed unless otherwise established in unit SOPs.

   a. Takeoff: All helicopters should leave the ground simultaneously. The trailing aircraft must remain at a level altitude or stack up 1 to 10 feet vertically to remain out of the disturbed air of the aircraft in front of them. In the event an aircraft in the flight loses visual contact with the formation they will immediately make a radio call to the formation and the P* will initiate a climb above the briefed cruise altitude and attempt reorientation of the formation.

   b. Cruise: Free cruise formation should be employed when operating at terrain flight altitudes or in a combat environment. This will allow the individual aircraft more flexibility to move within the formation avoiding terrain, obstacles and enemy threat.

      (1) During periods of degraded visibility, crews are more susceptible to losing other aircraft in the formation. Crews should consider flying a close formation to maintain orientation on the flight. In the event an aircraft in the flight loses visual contact with the aircraft they are following, they will immediately make a radio call to lead. Lead will announce; heading, altitude and airspeed. Lead must maintain this heading, altitude and airspeed until all aircraft have rejoined the flight.

      (2) The aircraft that has lost visual contact with the flight will immediately assume the flights heading and airspeed in order to maintain horizontal separation as briefed. If enemy and terrain allow, the aircraft that has lost visual contact will also maintain vertical separation by initiating a climb to a briefed altitude. When

a flight becomes separated immediate altitude separation is a quick and efficient way to prevent an accident.

(3) Unit SOPs must state the procedures for reestablishing contact with the flight. Considerations should include but are not limited to rallying to an in-flight link-up, rallying to a known point, use of covert/overt lighting, and ground rally. METT-TC, PWR AVAIL and ambient light will influence how contact is reestablished. When a flight rallies to a known point, the point may be an ACP along the route, position sent by lead, or a terrain feature.

(4) Situations may occur when an aircraft rejoins the flight in another position than briefed. Mission commanders should use altitude, a WPT/TGT, cardinal direction or other method (manmade or natural features) to maintain separation. Only after the entire flight is formed should the mission commander proceed with the mission.

c. Approach: The lead aircraft must maintain a constant approach angle so other aircraft in the formation will not have to execute excessively steep, shallow, or slow approaches. Aircraft should not descend below the aircraft ahead of them in the formation and entering their rotor-wash. This could result in an over-torque, loss of aircraft control, or entering a settling with PWR condition. In the event an aircraft in the flight loses visual contact with the formation, they will immediately make a radio call to the formation and execute a go around in the briefed direction.

d. Aircrew Briefing: All multi-aircraft operations will be briefed using a unit approved multi-aircraft/mission briefing CL. Table 4-1, page 4-101, provides mandatory briefing items that must be included in all multiaircraft briefings.

Table 4-1. Multiaircraft operations briefing checklist

Formation type(s): Takeoff, Cruise, Approach
Altitude
Airspeed: Outbound to SP, Cruise, Inbound from RP
Aircraft lighting
Loss COMM procedures
Lead change procedures
Loss of visual contact/in-flight link-up/rally points
Actions on contact
IIMC procedures
Downed aircraft procedures/Personnel Recovery/CSAR

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply common considerations and the following: Increase the interval between aircraft to a minimum of three to five rotor disks. Keep changes in the formation to a minimum.

1. Night. During unaided night flight, the crew should use formation and position lights to aid in maintaining the aircraft's position in the formation. Lighting will be IAW AR 95-1 and unit SOP.

2. NVG. When conducting NVG formation flight, the crew should use the formation lights and if equipped the IR anti-collision and position lights to maintain t aircraft's position in the formation.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 2049

Perform Global Positioning System Aided Navigation

CONDITIONS: In an OH-58A/C.

STANDARDS: Apply appropriate common standards and the following:

1. Operate the installed electronically aided navigational system IAW the appropriate TM and perform the following—
2. Add/delete/edit/store user defined WPTs.
3. Perform direct-to function.
4. Build a route.
5. Select appropriate route.
6. Route review function.
7. Show page functions.
8. Determine the position of the aircraft along the route of flight within 100 meters.

DESCRIPTION:

1. Crew actions.

   a. The P* will fly the programmed navigation course using system displayed navigation cues or as directed by the P.

   b. The P will announce all navigation destination changes and verify the heading. The P* will acknowledge and verify the new navigation heading.

Note. Only the P will perform in-flight time/labor intensive navigation system programming duties (for example, building routes) when AVAIL. When flying single pilot, programming of the navigation system should be completed prior to takeoff.

Note. The PC will ensure situational awareness is maintained at all times due to increased workload and information management challenges.

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   c. As pertinent to the situation, either the P or P* will perform route navigation and position verification.

2. Procedures. The test and programming procedures are IAW the appropriate TM.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203, and FM 3-04.240.

TASK 2050

Develop an Emergency Global Positioning System Recovery Procedure

WARNING

This procedure is designed strictly for recovery under VMC and for IIMC. This procedure will not be used for a planned IFR flight unless approved by USAASA. This emergency recovery procedure is only authorized to be flown when the situation prevents the use an approved instrument procedure.

Note. This task should be selected for instrument examiners.

CONDITIONS: With a tactical or aeronautical map with current obstruction information. A mission planning system with digital maps and recent CHUM may be used to aid in developing this procedure.

STANDARDS: Apply appropriate common standards and the following:

1. Select a suitable recovery/landing area and coordinate, if required, airspace deconfliction.
2. Select an approach course (degrees magnetic), a missed approach course, final approach fix (FAF), MAP, intermediate approach fix (IF), initial approach fix (IAF) and missed approach holding fix (MAHF).
3. Determine obstacle clearance for the final, MAHF, missed, intermediate, initial segments, and the MSA.
4. Determine altitudes based on obstacle clearance for FAF, MAHF, MAP, IF, IAP, and MSA.
5. Determine the appropriate obstacles in the missed approach segment and determine 20:1 slope penetration.
6. Establish a 3 NM holding pattern at the MAHF.
7. Prepare an emergency recovery procedure diagram IAW the example.
8. Complete a suitability/fly ability check, to include loading WPTs, under VMC to validate the procedure.

Note. All altitudes are in feet MSL, all WPTs are latitude/longitude, all distances are NMs and visibility is statute miles. All obstacles are MSL unless otherwise noted. The FIH has the necessary conversion tables.

WARNING

Ensure coordinates for maps and GPS are the same datum (such as WGS-84) or points on the ground may be off significantly and obstacle clearance will be questionable.

Note. Precise positioning service (PPS) refers to the GPS precise positioning service. It is DOD policy that military aircraft operate with the GPS in the PPS mode.

Note. Complete the enclosed figures for determining approach criteria. The width cannot be adjusted.

DESCRIPTION:

1. Crew action.

a. **Select The Most Suitable Recover/Landing Area.** Select an area based on METT-TC and obstacles. Ensure proper coordination for airspace de-confliction has been accomplished.

b. **Final Approach Segment (Figure 4-4):**

(1) Final Approach Segment – The final approach segment begins at the FAF and ends at the MAP.

(2) Determine the MAP (normally associated with the landing area or threshold).

(3) Determine the FAF. The minimum distance is 3 NM from the MAP. The MAX length is 10 NM. The optimum length is 5nm. The width is 2.4 NM (1.2nm on either side of centerline).

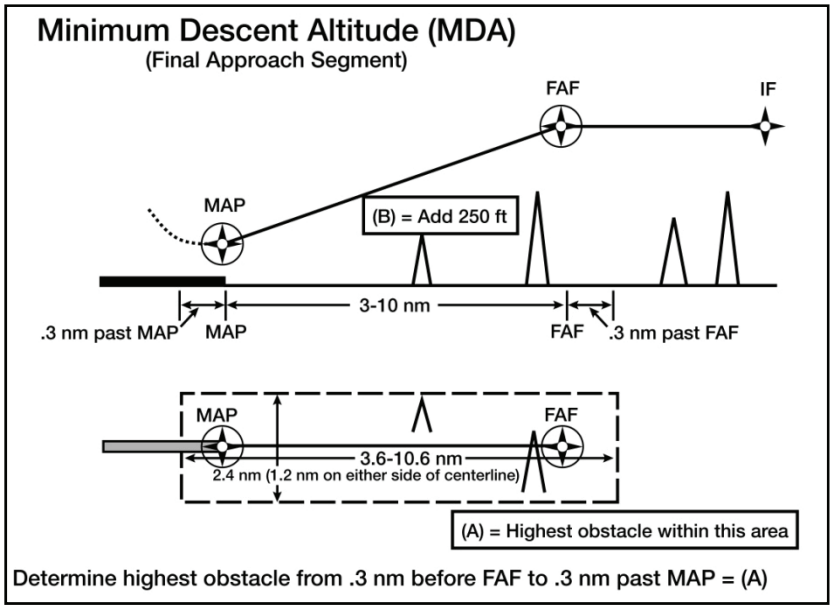

Figure 4-4. Final approach segment

c. Determine the MAHF (Figure 4-5, page 4-112).

(1) Determine the MAHF for the landing area.

(2) The minimum distance is 3 NM and the MAX distance is 7.5 NM from the MAP. The optimum distance is 5 NM. The holding pattern leg will not exceed 3 NM. The width is 4 NM (2 NM on either side).

Solution: (A) (rounded up nearest 100 feet) + (B) 1000 feet = (C) (MAHF Altitude)
(A) = Highest obstacle within 10 NM centered on the MAHF

Figure 4-5. MAHF altitude calculation diagram

d. Missed Approach Segment (Figure 4-6):

(1) The missed approach segment will start at the MAP and ends at a holding point designated by a MAHF.

(2) Optimum routing is straight ahead (within 15° of the final approach course) to a direct entry. A turning missed approach may be designated if needed for an operational advantage, but is not discussed in this task due to the complexity of determining obstacle clearance.

(3) The area of consideration for missed approach surface and the 20 to 1 obstacle clearance evaluation for all rotary wing.

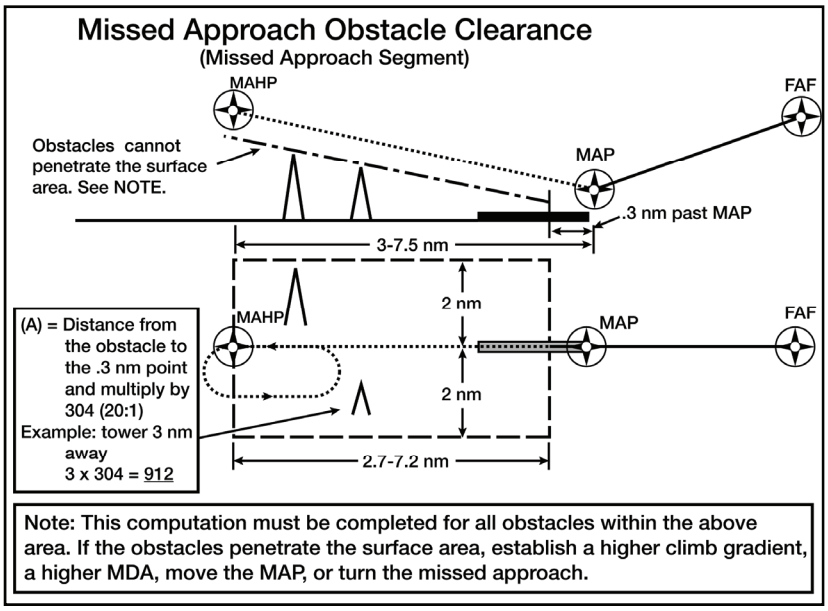

Figure 4-6. Missed approach segment

e. Intermediate Approach Segment (Figure 4-7, page 4-113).

(1) The intermediate segment begins at the IF and ends at the FAF.

(2) Determine the IF. The minimum distance is 3 NM and the MAX distance is 5 NM from the IF to the FAF. The width is 4 NM (2 NM on either side).

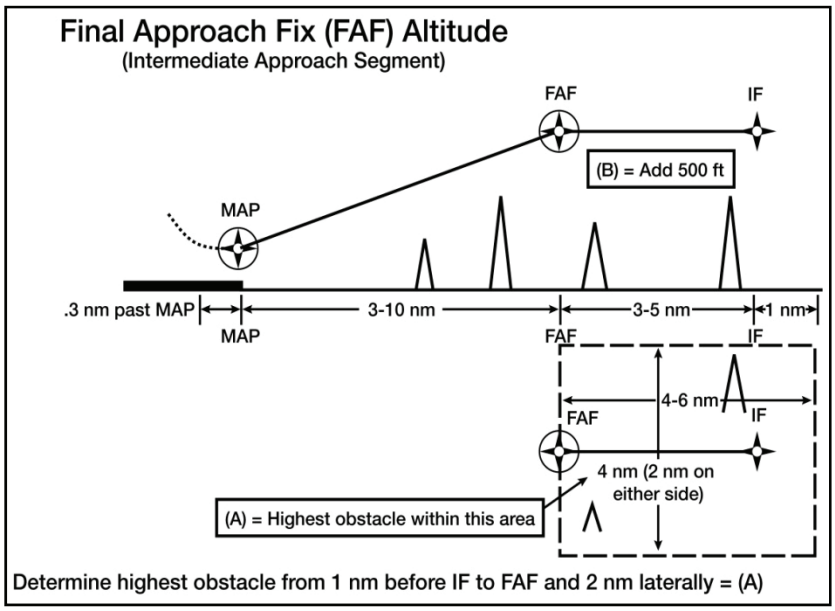

Figure 4-7. Intermediate approach segment

f. Initial Approach Segment (Figure 4-8).

(1) The initial approach segment begins at the IAF and ends at the IF.

(2) Determine the IAF. Up to three IAFs are allowed. The minimum distance is 3 NM from the IF and the MAX distance is 10 NM. The width is 4 NM (2 NM on either side).

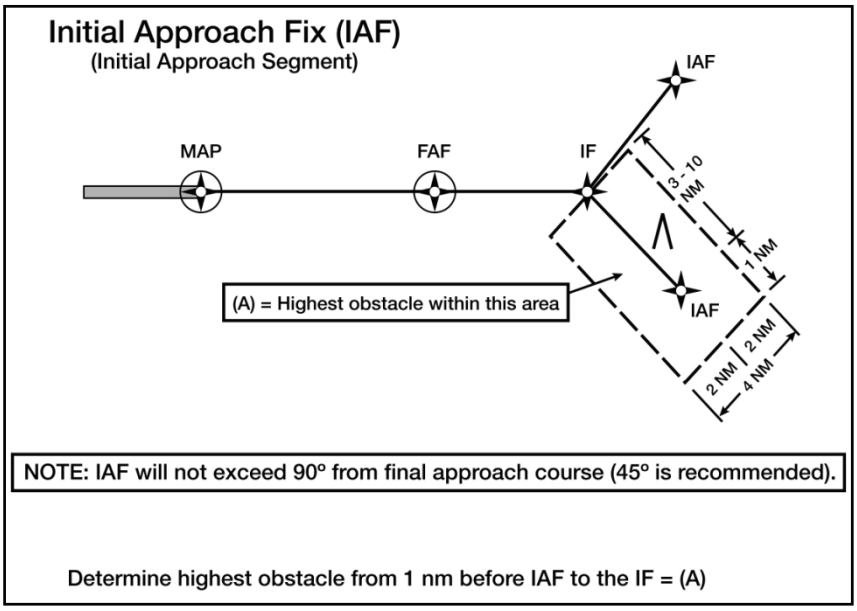

Figure 4-8. Initial approach segment

g. Determine the MSA for the Landing Area (Figure 4-9, page 4-114).

(1) Use the off route obstruction clearance altitude or off route terrain clearance altitude elevation from the enroute low altitude (ELA) chart for the area of operations, if AVAIL.

(2) Select the highest altitude within 30 NM of the MAP.

(a) If an ELA is not AVAIL, the minimum sector altitude will be determined by adding 1000 feet to the MAX elevation figures (MEF). When a MEF is not AVAIL, apply the 1000 feet rule to the highest elevation within 30 NM of the MAP.

(b) Minimum sector altitudes can be established with sectors not less than 90° and with sector obstacle clearance having a 4 NM overlap. Use the figure below for determining MSA.

Solution: (A) (rounded up nearest 100 feet) + (B) 1000 feet = (C) (MSA)
(A) = Highest obstacle within 30 NM centered on the MAP

Figure 4-9. MSA calculation diagram

2. Procedure.

a. The Procedures Diagram (Figure 4-10).

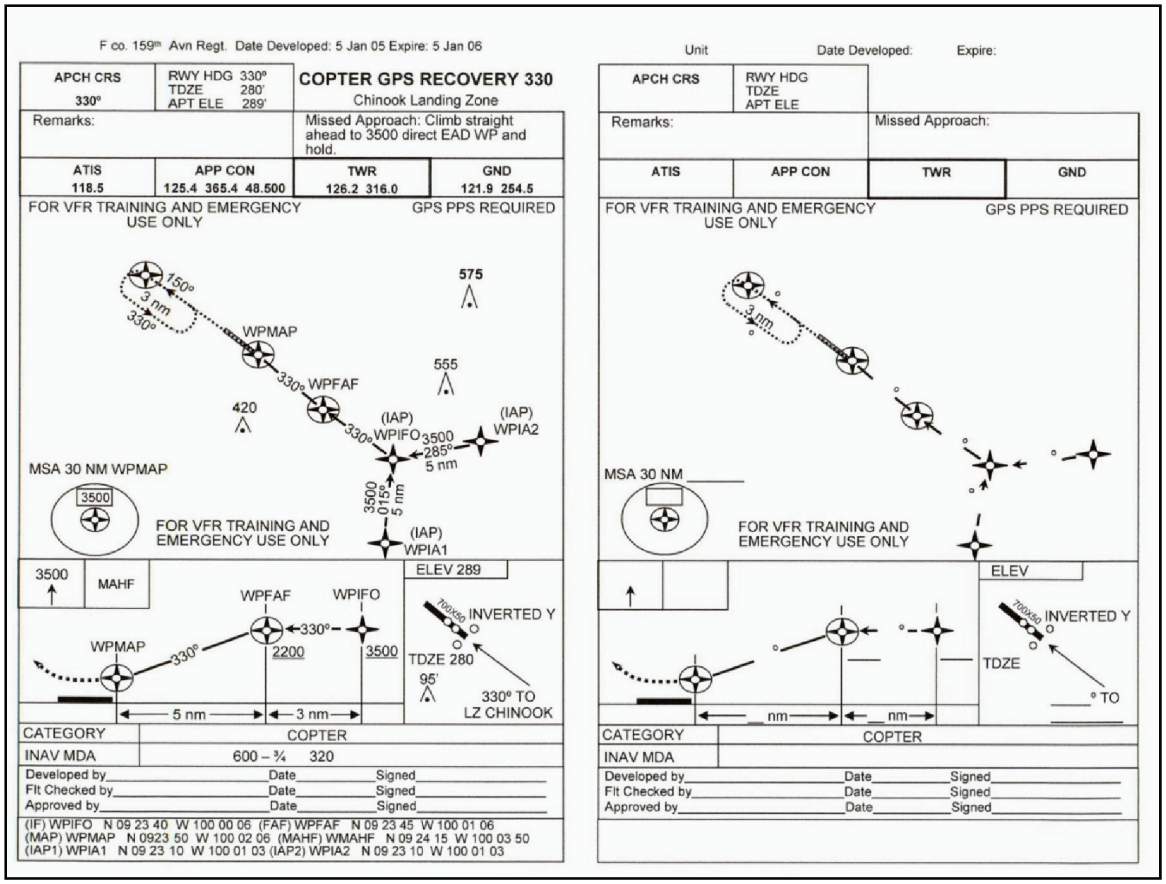

Figure 4-10. Sample of emergency GPS diagram

(1) The procedure diagram may be computer generated or hand sketched. The diagram need not be as detailed as a DOD approved chart, but must provide all data as outlined in the example to execute the procedure.

(2) The Plan View. The plan view will include the following.

(a) The highest obstacle altitude (MSL) in BOLD.

(b) The approach course (degrees magnetic), IAF, IF, FAF, MAP, MAHF holding pattern, obstacles, and MSA. It also includes the terms:

- "FOR VFR TRAINING and EMERGENCY USE ONLY" twice.
- "PPS REQUIRED."

(c) Minimums section. The minimums section will include the following. The minimum descent altitude, visibility, and the height above landing (HAL). Use Figure 4-11 to compute the landing visibility minimum based on HAL.

(d) Landing area sketch. The landing area sketch includes a drawing/diagram of the landing area and the elevation of the highest obstacle within the landing area (if applicable).

(e) Prior to publication, the diagram will include, as a minimum, all items included in the example diagram.

HAL	250 – 475 feet	476 – 712 feet	713 – 950 feet
Landing Visibility Minimum (SM)	½	¾	1.0

Figure 4-11. Height above landing diagram

b. Flight Check. Complete a flight check under VMC in an aircraft to finalize the procedure and validate the diagram. Once a successful flyability/suitability check has been completed, the diagram will be validated by the developer in the lower marginal data area. Once validated by the developer the procedure must be approved by the appropriate authority in the lower marginal data area prior to publication. The flight should validate the following:

(1) Locations – IAF, IF, FAF, MAP, and MAHF.

(2) Obstacles.

(3) Approach course.

(4) Obstacle clearance.

(5) Altitudes – Minimum decision altitude (MDA), FAF, IF, IAF, MSA/Holding pattern altitude.

Note. All WPTs (IAF, IF, FAF, MAP, and MAHF) will be verified by two separate GPS navigation systems, such as DGNS, EGI, PLGR. At least one will have PPS. If unable to complete a suitability/flyability check due to the operational environment, the commander should consider an elevated risk when using this recovery procedure.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FAA handbook 8260.3, FAA Order 8460.42A, and FAA Order 7130.3.

TASK 2051

Perform Emergency Global Positioning System Recovery Procedure

CONDITIONS: In an OH-58A/C helicopter under IMC, or simulated IMC.

Note. Use of the GPS as an IFR navigational system is not authorized; however, its use should be considered and planned for as an emergency backup system.

STANDARDS: Apply appropriate common standards and the following:

1. Maintain airspeed appropriate for the conditions (FAF to MAP).
2. Maintain heading ±5°.
3. Comply with descent minimums prescribed for the approach.
4. Execute the correct missed approach procedure.

DESCRIPTION:

1. Crew actions.

   a. The PC will review the approach with the other crewmember before initiating the procedure. The PC will confirm with the P the specific approach to be flown, that the correct route and communication frequencies are set/selected, WPTs are properly entered, and attitude indications properly set, as required. The PC may assign the P to perform these duties.

   b. Operators Supplement.

   c. The P will call out the approach procedure to the P*. The P will select and announce radio frequencies and will monitor radios and ATC information not monitored by the P*. If directed by the PC, the P will complete the approach when VMC are encountered. During simulated IMC, the P will remain focused outside the aircraft to provide adequate warning for avoiding obstacles and hazards detected. The P will announce when his attention is focused inside the cockpit.

2. Procedures.

   a. En route to the FAF. After initially completing the inadvertent IMC recovery procedures (Task 1083), the P should select the pre-programmed route for the emergency GPS approach and the P* should fly to the IAF.

   b. FAF to MAP. As the aircraft arrives at the IAF, conduct a procedure turn or (for direct entry) continue to the FAF as the next “fly to” WPT and reduce airspeed to 70 KIAS or less (if desired). The P should set the radar altimeter low warning to the HAL as time permits. During the descent to the MAP, the P will monitor outside for visual contact with the landing environment and complete the approach as briefed if VMC is encountered. Consider reducing the airspeed prior to arrival at the MAP in anticipation of a full stop landing. Forward looking infrared (FLIR) may be used, if equipped, to assist in identifying the landing area.

   c. MDA (preferred method). Once established on the course inbound control the rate of descent to arrive at the DH prior to the MAP. Consideration should be given to the weather conditions and if required, a higher rate of descent may be needed to arrive at the MDA prior to the MAP. Arriving at this altitude prior to the MAP allows for a greater chance of encountering VMC.

   d. MAP procedure. If VMC conditions are not encountered, perform the missed approach procedure per the plan upon reaching the MAP. Immediately establish a climb utilizing MAX R/C airspeed until established at the minimum safe altitude (MSA).

Note. This procedure will only be used for training in simulated IMC or during inadvertent IMC when a NDB approach or ground controlled approach (GCA) is not AVAIL. IFR use of the global positioning navigation system is not authorized; however, the crew should consider and plan for its use as an emergency backup system.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations.

2. The P should be in a position to assume control of the aircraft at the MAP and assume control of the aircraft when the landing environment can be determined using NVG. During night unaided flight, consider using the searchlight to identify the landing environment.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.240, FAA Handbook 8260.3, FAA Order 8460.42A, and FAA Order 7130.3.

TASK 2061

Perform Thermal Imaging Sensor Observation

CONDITIONS: In an OH-58A/C helicopter with thermal imaging system (TIS) installed.

STANDARDS: Apply appropriate common standards and the following:

1. Conduct thorough mission planning.
2. Conduct map reconnaissance.
3. Acquire and survey target.
4. Minimum 500 feet AGL.
5. Record information as required.

DESCRIPTION:

1. Crew actions.

   a. The crew conducts TIS observation on a suspected object of interest when the law enforcement agency (LEA) desires information about a particular target. The specific target is identified by landmarks and coordinates in latitude and longitude if AVAIL.

   b. The crew must conduct a map reconnaissance using the factors of METT-TC. The crew must consider factors regarding solar loading for the geographical area, and should strongly consider performing a daylight reconnaissance of the target area.

2. Procedure.

   a. The crew will navigate to the target area. The P* will maneuver the aircraft as necessary to allow the P to maintain TIS orientation on the target. The P* will maintain obstacle avoidance and scan for conflicting traffic. The P may record images of the target and similar targets for the purpose of comparison.

   b. The crew will ensure the LEA maintains chain of custody of the original TIS recording.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply common considerations. When maneuvering the aircraft to maintain the TIS on target, the P* must consider obstacles and other aircraft. The P should momentarily assist the P* with obstacle avoidance and clearing the aircraft and announce when doing so.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may conducted in the aircraft or a static aircraft.
2. Evaluation will be conducted in the aircraft.

Note. To conceal the possibility of a noise signature and remain within the operational limits of the TIS, recommended altitudes for operations are above 1000 feet AGL.

Note. For the purposes of training and evaluation, this task may be performed during the day.

REFERENCES: Appropriate common references, TIS operator's manual, FM 17-95, FM 3-04.126, and FM 3-04.203.

TASK 2067

Select Landing Zone/Pickup Zone/Holding Area

CONDITIONS: In an OH-58A/C or orally.

STANDARDS: Apply appropriate common standards and the following:

1. Landing zone (LZ)/pickup zone (PZ).

   a. Perform map, photo, or visual reconnaissance of the assigned area.

   b. Determine that the LZ/PZ is suitable for the mission (size, number of aircraft, type cargo).

   c. Provide accurate and detailed information to organic or supported unit.

2. Holding area (HA). Confirm suitability of a HA.

DESCRIPTION:

1. Crew actions.

   a. The crew will confirm location of plotted hazards and call out the location of unplotted hazards. They will perform the reconnaissance using the appropriate aircraft sensors or visual means. The PC will confirm suitability of the area.

   b. The P* will remain focused outside the aircraft to avoid obstacles and will remain oriented on the proposed HA or LZ. The P* is responsible for clearing the aircraft and obstacle avoidance.

   c. The P will assist in reconnaissance of the LZ/PZ/HA, aircraft orientation, and obstacle avoidance. The P will announce when attention is focused inside the aircraft, will operate the Color Camera/FLIR, and take notes as necessary to accomplish the reconnaissance.

2. Procedures.

   a. LZ/PZ. The initial selection or reconnaissance of an LZ/PZ/HA begins with the analysis of maps, photos, and intelligence preparation of the battlefield (IPB). If maps or photos are unreliable, IAW METT-TC, a fly-by may be performed while using the color camera/FLIR to allow for a detailed analysis of the area. When a fly-by is executed, the aircrew should not loiter or make more than one pass over the area. Determine the suitability of the LZ/PZ/HA by considering applicable tactical, technical, and meteorological elements. The reconnaissance data should be recorded on a worksheet. Target store can be used to record primary and secondary routes for approach and departure.

      (1) Tactical.

         (a) Mission. Determine if the LZ or PZ will facilitate the supported unit’s ability to accomplish the mission.

         (b) Security. Consider size and proximity of threat elements versus availability of security forces. Consider cover and concealment, key terrain, and avenues of approach and departure. The area should be large enough to provide dispersion.

         (c) Location. If conducting a reconnaissance for an insertion mission, consider distance of LZ/PZ/HA from supported unit or objective, and supported unit's mission, equipment, and method of travel to and from the LZ/PZ/HA.

      (2) Technical characteristics (utilizing the acronym LONGLASSV) of the LZ or PZ include:

         (a) Landing formation. Determine if the shape and size of the LZ/PZ/HA are suitable for the formation to be flown.

         (b) Obstacles. Hazards within the LZ/PZ that cannot be eliminated must be plotted.

(c) Number of aircraft. Determine if the size of the LZ/PZ/HA will support the type and amount of aircraft that will be landing to the ground or hovering, as part of multi-ship operations. It may be necessary to provide an additional LZ/PZ nearby, or land aircraft at the same site in successive flights.

(d) Ground slope of the landing area. Normally if ground slope is greater than 15°, helicopters cannot land safely.

(e) Load suitability. When high density altitude/GWT operations are conducted, determine if the LZ/PZ/HA shape, size, vertical obstacles, and actual landing area surface condition will support operations by aircraft at/near their MAX operational GWT.

(f) Approach or departure direction. The direction of approach or departure should be over the lowest obstacles and generally into the wind with METT-TC considered.

(g) Size of LZ or HA. The area around the LZ/PZ/HA should be clear of obstacles that could cause aircraft damage. Situation depending, consideration should be given to plotting obstacles.

(h) Surface conditions. Consider blowing sand, snow, or dust. Be aware that vegetation may conceal surface hazards (for example, large rocks, ruts, or stumps). Areas selected should also be free of sources of rotor wash signature. If the area is wet, consider the effects of mud and aircraft WT.

(i) Vulnerability. Consideration must be given to the vulnerability of ground troops in the LZ/PZ during air assault operations and to helicopters in the HA.

(3) Meteorological.

(a) Ceiling and visibility. This must be considered in order to prevent IIMC.

(b) Winds. Determine approach and departure paths.

(c) Density altitude. High density altitude may limit loads and therefore require more sorties.

b. HA. HA(s) are usually selected primarily by the map reconnaissance and it may not be feasible to conduct a reconnaissance by aircraft prior to arrival. If it is determined to be unsuitable for use after arrival, an alternate area may be chosen. The following items will be considered when selecting a HA.

(1) Obstacles within the HA.

(2) Cover and concealment.

(3) Key terrain.

(4) Avenues of approach and departure.

(5) Security.

Note. Avoid planning approach or departure routes into a rising or setting sun or moon.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations.

2. Unimproved and unlit areas are more difficult to evaluate at night because of low contrast. Knowledge of the various methods for determining the height of obstacles is critical to successfully completing this task. LZ/PZ/HA will require a larger area at night. Details of the landing area will be more difficult to see.

CONFINED AREA CONSIDERATIONS: Determine a suitable axis and path for a go-around. For multi-aircraft operations, determine the number of aircraft that the area can safely accommodate at one time.

SNOW/SAND/DUST CONSIDERATIONS:

1. Apply common considerations.

2. Be prepared for possible whiteout/brownout upon entry into the LZ/PZ/HA. Evaluate surface conditions for the likelihood of the using unit encountering a whiteout/brownout and IMC recovery. Determine a suitable path for a go-around.

MOUNTAIN/PINNACLE/RIDGELINE CONSIDERATIONS: When practical, position the aircraft on the windward side of the area. Evaluate suitability of the area, paying particular attention to density altitude and winds. Determine a suitable path for a go-around. Operations at high altitudes are more likely to expose the crews to visual detection and radar and heat seeking weapons.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft, or orally.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 2125

Perform Pinnacle or Ridgeline Operation

CONDITIONS: In an OH-58A/C helicopter with before-landing check completed.

STANDARDS: Apply appropriate common standards and the following:

1. Approach.
   a. Without deviation, maintain ground track alignment with the selected approach path.
   b. Maintain a constant approach angle.
   c. Properly perform a low reconnaissance.
   d. Execute a smooth and controlled termination in the forward one-third of the landing area.
2. Takeoff.
   a. Without error, perform a HVR PWR check and complete a before-takeoff check.
   b. Perform an airspeed-over-altitude takeoff while maintaining heading ±10°.

DESCRIPTION:

1. Crew actions.

   a. The P* will remain focused outside the aircraft to evaluate suitability of the terrain throughout the approach and landing. The P will announce termination of the approach to a HVR or to the ground and will announce any deviation from the tentative flight path.

   b. The P will assist the P* in performing the high reconnaissance. The P will confirm suitability of the area, assist in clearing the aircraft, and provide adequate warning of obstacles. The P will announce when attention is focused inside the aircraft.

2. Procedures.

   a. Approach.

      (1) Select a flight path, airspeed, and an altitude that afford best observation of the landing area. When practical, position the aircraft on the windward side of the pinnacle or ridgeline. Remain focused outside the aircraft to evaluate suitability of the area, evaluate the effects of wind, and clear the aircraft throughout the approach and landing.

      (2) Select a touchdown point in the forward one-third of the landing area and announce termination of the approach to a HVR or to the ground. Announce any deviation from the approach and a tentative flight path for the departure. The approach angle can vary from a shallow to a steep angle, depending on the wind, density altitude, GWT and availability of forced landing areas. Continue the reconnaissance on the final approach to confirm suitability of the area and effects of wind.

      (3) Reduce airspeed to slightly above ETL until the rate of closure can be determined and then adjust the rate of closure to no faster than a brisk walk. Execute a go-around before going below ETL if the reconnaissance reveals that a safe landing cannot be accomplished.

      Note. To successfully operate into small areas, it may be necessary to place the nose of the aircraft over the edge of the landing area. This may cause a loss of important visual references when on final approach. The P must assist the P* in providing information on aircraft position in the landing area.

   b. Touchdown. Perform a ground reconnaissance and clear the aircraft. After touchdown, conduct a stability check before lowering the collective to the full-down position. Accomplish this by slowly moving the cyclic and pedals while lowering the collective. If movement is detected, reposition the aircraft.

c. Takeoff. Perform the before-takeoff check and verify a HVR PWR check if required. Clear the aircraft during takeoff. Announce the intent and the direction of takeoff. Execute an airspeed-over-altitude takeoff and announce the intent to abort or alter the takeoff. If the takeoff requires clearing obstacles, use PWR as necessary to clear the obstacles while maintaining a constant climb angle and ground track. After clearing the obstacles, adjust attitude to gain forward airspeed.

Note. HVR OGE PWR is required for pinnacle or ridgeline operation.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations.

2. Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. The rate of descent during the final 100 feet should be slightly less than during the day to avoid abrupt attitude changes at low altitudes. After establishing the descent, reduce airspeed to approximately 40 to 45 knots until apparent ground speed and rate of closure appear to be increasing. Progressively decrease the rate of descent and forward speed until termination.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 2205

Locate Target using Latitude/Longitude Coordinates

CONDITIONS: In an OH-58A/C helicopter, or orally in a classroom, given a target and required maps and materials.

STANDARDS: Apply appropriate common standards and the following:

1. Accurately determine latitude and longitude in degrees, minutes, and tenths/hundredths.
2. Without error, locate the final objective given a latitude/longitude.

DESCRIPTION: Using the required maps and materials, the crew must determine the exact target location using degrees, minutes, and tenths/hundredths or seconds. If the map given is in seconds, then convert to tenths/hundredths using the six-second conversion table. If given latitude/longitude coordinates accurately plot the target location.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, and refer to maps and charts of local operations area.

TASK 2215

Perform Urban Helipad Operations

CONDITIONS: In an OH-58A/C helicopter with OGE PWR AVAIL, aircraft cleared, before takeoff/landing check complete, and operating at an urban helipad or simulated urban helipad environment.

STANDARDS: Apply appropriate common standards and the following:

1. Landing Area Reconnaissance. Properly perform continuous reconnaissance.
2. Approach.
   a. Maintain ground track alignment.
   b. Maintain a constant approach angle.
   c. Maintain a constant rate of closure.
   d. Continue to properly perform a landing area reconnaissance.
   e. Execute a smooth and controlled termination to helipad.
3. Takeoff.
   a. Select a suitable takeoff path.
   b. Perform a HVR PWR check, if required, and complete the before takeoff check without error.

DESCRIPTION:

1. Crew actions.

   a. Upon approaching the area, the P* will select an altitude, airspeed, and a flight path that is optimal for the conditions and affords a suitable escape route. Identify and locate obstacles and estimate the effects of the wind.

   b. On final approach, confirm the location of obstacles; determine effects nearby buildings have on wind patterns and suitability of approach path selected. The P will perform the before landing check prior to landing. If a safe landing becomes doubtful, initiate a go around before going below ETL or before descending below obstacles. Maintain the aircraft in trim above obstacles and maintain landing area alignment below obstacles.

2. Procedure.

   a. After landing, formulate the takeoff plan by evaluating the winds and obstacles. Complete the before takeoff check and perform a HVR PWR check if required.

   b. During takeoff, maintain ground track and climb angle as necessary to clear obstacles safely. Maintain airspace awareness for additional hazards.

   c. The P will assist the P* as directed, monitor aircraft instruments, rates of closure, and assist the P* in obstacle avoidance.

> ***Note.*** Urban helipads are normally very small and in confined areas of the city. Urban helipads may have established arrival and departure routes and dedicated frequencies. Check local NOTAMs, FLIPs and the Airport Facility Directory.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply common considerations and the following:

1. The high light levels associated with cities may preclude the use of NVG.

2. Urban helipads are more difficult to evaluate at night. Approach and landing should be slightly slower than daylight operations.

3. Before conducting helipad operations at night, ensure the landing light (white light) or IR light is in the desired position.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203, Task 1058, and Task 2125.

TASK 2225

Perform Border Operations

CONDITIONS: In an OH-58A/C helicopter or orally in a classroom environment.

STANDARDS: Apply appropriate common standards and the following:

1. The crew will—
   a. Conduct thorough mission planning.
   b. Conduct map reconnaissance.
   c. Establish and maintain COMM if applicable.
   d. Make specific and timely reports.
2. The P* will—
   a. Maintain assigned scan sectors.
   b. Without error, navigate borderlines.
3. The P will—
   a. Select and employ the necessary equipment to ensure a thorough search is conducted of assigned sectors.
   b. Maintain contact with designated target(s).
   c. Correctly direct the P* to maneuver the aircraft to maintain contact with the target.
   d. Assist the P* in navigating borderlines and notify the P* prior to any violations.
   e. As necessary, operate installed electronic navigation system.

DESCRIPTION:

1. Crew actions.
   a. During missions involving observation of borderlines and surrounding areas, the crew is primarily concerned with detection, identification, location, and reporting.
   b. Aerial observation is used in tactical and non-tactical environments.
2. Procedures. The PC will ensure a detailed map reconnaissance is accomplished to avoid flying across borders. The crew will employ the electronic navigation system as necessary to navigate the desired course.

CAUTION

If flight is conducted at or below ETL, the P* must ensure that OGE PWR is AVAIL, heading control is positively maintained, and aircraft limits are not exceeded. Due to the lack of outside pilot references to aid in maintaining aircraft position and altitude, spatial disorientation may occur if ground references are lost or if proper scanning techniques are not used.

CAUTION

The P* will not use the TIS to maintain obstacle clearance; however, the P may give cues received from the TIS to the P* to aid in obstacle avoidance.

NIGHT OR NIGHT VISION GOGGLES OR TIS CONSIDERATIONS: Apply common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.
2. Evaluation may be conducted in the aircraft or academically.

REFERENCE: Appropriate common references, TIS operator's manual, TM 55-1520-228-10, FM 3-04.140, FM 3-04.203, and unit SOP.

TASK 2230

Perform Platform Landings/Takeoff Operations

CONDITIONS: In an OH-58A/C helicopter with a helicopter platform or simulated platform with before landing/takeoff check completed.

STANDARDS:

1. Apply appropriate common standards.
2. P*.
   a. Landing from a HVR, establish a HVR altitude of 3 feet +/- 1 foot above platform level.
   b. Takeoff to a HVR, establish a HVR altitude of 3 feet +/- 1 foot above platform.

DESCRIPTION:

1. Crew actions.
   a. The P* will announce intent to perform platform landing/takeoff operations. The P* will clear the aircraft, maintain visual reference outside the aircraft and ensure platform stability. The crew will monitor the closure rate during approach and landing. The P* will direct the P to assist as necessary and will announce termination of the maneuver. After landing, do not attempt to reposition the aircraft.
   b. The P will acknowledge all announcements or instructions and advise of any deviation not announced by the P*. The P will remain focused primarily outside the aircraft to assist in drift detection and aircraft clearance.
2. Procedure.
   a. The P* will perform the following actions:
      (1) Landing from a HVR. From a stabilized HVR, decrease the collective and establish a constant approach angle to touchdown while making corrections with the pedals and cyclic to maintain a constant heading and ground track. After initial contact with the platform, ensure that the aircraft remains stable while smoothly decreasing the collective until the entire WT of the aircraft rests on the platform.
      (2) Takeoff to a HVR. With the collective fully down, place the cyclic in the neutral position. Increase the collective with smooth, positive pressure until the aircraft becomes light on the skids. Apply pressure and counter-pressure on pedals to ensure that the aircraft is free to ascend. While maintaining heading with the pedals, coordinate the cyclic for a vertical ascent.
   b. Upon reaching the desired HVR altitude above the platform, perform the initial HVR check IAW the operator's and crewmember's CL.

> **CAUTION**
> If successful completion of the landing is doubtful, abort the maneuver. Ensure the aircraft is centered on platform, if the aircraft is not centered on the platform, return to a HVR and perform another landing.

Note. The P* should be aware of the tendency to become tense and over control the aircraft while performing platform operations.

Note. Before conducting platform operations, the crew must understand characteristics of dynamic rollover.

NIGHT AND NVG CONSIDERATIONS:

1. Apply common considerations and the following:
2. This is a NVG prohibited maneuver.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or static system trainer.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, TM 55-1520-228-10, FM 3-04.203, **Task 1058**, **Task 2125**, and **Task 2215**.

TASK 2235

Perform Shoreline Observation

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. The crew will –
   a. Conduct thorough mission planning.
   b. Conduct map reconnaissance.
   c. Establish and maintain COMM if applicable.
   d. Make specific and timely reports.
2. The P* will –
   a Maintain assigned scan sectors.
   b. Without error, navigate shoreline.
3. The P will –
   a. Select and employ the necessary equipment to ensure a thorough search is conducted of assigned sectors.
   b. Maintain contact with designated target(s).
   c. Correctly direct the P* to maneuver the aircraft to maintain contact with the target.
   d. Assist the P* in navigating shoreline.
   e. As necessary, operate installed electronic navigation system.

DESCRIPTION:

1. Crew actions.
   a. During missions involving observation of shoreline and surrounding areas, the crew is primarily concerned with detection, identification, location, and reporting.
   b. Aerial observation is used in tactical and non-tactical environments (Task 1472).
2. Procedure. The P* will fly an altitude, airspeed, and flight path as directed by the P in order to maintain TIS or visual contact with the shoreline at all times.

CAUTION

If flight is conducted at or below ETL, the P* must ensure that OGE PWR is AVAIL, heading control is positively maintained, and aircraft limits are not exceeded. Due to the lack of outside pilot references to aid in maintaining aircraft position and altitude, spatial disorientation may occur if ground references are lost or if proper scanning techniques are not used.

CAUTION

The P* will not use the TIS to maintain obstacle clearance; however, the P may give cues received from the TIS to the P* to aid in obstacle avoidance.

Note. If over water operations are conducted, ALSE will be used. Refer to AR/NGR 95-1 and unit SOP for requirements.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or static system trainer.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, TIS operator's manual, aircraft operator's manual, AR/NGR 95-1, FM 3-04.203, and unit SOP.

TASK 2240

High Altitude Operations, High/Low Reconnaissance

CONDITIONS: In an OH-58A/C helicopter with PWR requirements computed.

STANDARDS: Apply appropriate common standards and the following:

1. High Reconnaissance.
   a. Maintain 60 KIAS +10 knots.
   b. Determine the suitability of the landing area.
   c. Determine winds (wind drift circle or time between two points).
   d. Determine the approach and takeoff routes.
   e. Determine the escape route.
   f. Select an altitude low enough to make a good analysis of the landing area.
2. Low Reconnaissance.
   a. Maintain airspeed above ETL.
   b. Confirm high reconnaissance.

DESCRIPTION:

1. Crew actions.
2. Determine winds.

   a. Wind drift circle. Fly over the landing area at 200-500 feet AGL and select a reference point. Note the aircraft heading and enter a constant rate of turn. Maintain the turn for a minimum of 360°, keeping the reference point in sight, roll out of the turn on the initial heading. Determine the wind direction by noting the aircraft position relative to the reference point. The wind direction is indicated by the apparent drift from the reference point.

   b. Time between two points (wind evaluation): Select two recognizable terrain features in the vicinity of the landing area with a separation of at least 300 meters. The points should be oriented in that general direction of the wind. Establish a constant airspeed of 60 KIAS. As the aircraft passes over the first reference point, note the position of the sweep second hand. When passing over the second reference point, note the time required to travel the distance between the two points. Reverse course and repeat the procedure. The direction of flight requiring the shortest time indicated the approximate direction of the wind. If a crab is necessary to maintain a desired ground track, the direction of the crab indicates a more specific wind direction. The larger the difference between times or the larger the crab angle, the higher the wind velocity. Perform the low reconnaissance when passing over the landing area.

   Note. The aircraft should be flown at an altitude slightly above the landing point and a portion of the flight path must be flown over the intended touchdown point.

   Note. Wind indications observed away from the landing area should be disregarded.

3. Procedures.
   a. High Reconnaissance.

      (1) When practical, the reconnaissance should be performed on the windward side of the pinnacle/ridgeline. The pattern can be a figure "8", circular, or racetrack. Select an altitude and flight path as close to the landing area as practical. Turns should be limited to bank angles of 30° or less. The wind speed and nature of the terrain must be considered when selecting an altitude. The flight altitude should be

high enough to ensure safe operations in the event a downdraft is encountered. The following information should be assessed during the high reconnaissance:

(a) Landing area. Determine the size, slope, and condition of the surface of the landing area along with obstacles in and around the LZ.

(b) Wind. Determine the approximate direction and speed of the wind and location of the demarcation line. Also, assess the wind flow characteristics.

(c) Escape routes. Identify escape routes where altitude can be exchanged for airspeed in case insufficient PWR is AVAIL or turbulence prevents a safe landing.

(d) Takeoff route. A takeoff direction into the wind and over the lowest obstacles is desirable for a safe takeoff route.

(2) Determine an approach path. When selecting an approach path, the following factors should be considered:

(a) Wind direction and velocity; land into the wind whenever possible.

(b) The approach should be shallow and slow, and PWR should be applied in the early stages of the approach.

(c) Choose an approach path that avoids areas of turbulence and obstacles.

b. Low Reconnaissance.

(1) A low reconnaissance verifies what is seen on the high reconnaissance and identifies any new information not previously noted. The low reconnaissance should be flown along the same flight path chosen for the approach and takeoff.

(2) The aircraft should be flown at an altitude slightly above and over the selected touchdown area. Airspeed should be maintained above ETL.

Note. HVR OGE PWR is required for high altitude operations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or static system trainer.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, FM 3-04.203, TC 1-228, **Task 1058**, and unit SOP.

TASK 2250

Perform Electronically Aided Navigation

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. Prepare the navigation system for operation.
2. Operate system IAW system operators manual.

DESCRIPTION:

1. Crew actions.

   a. The PC will assign navigation programming/verification duties.

   b. The P* or P will perform route navigation and position verification as required. The P* will fly the programmed navigation course using appropriate navigation cues provided through the display monitor unit (DMU). The P* will acknowledge and verify the new navigation heading.

   c. The P will announce all navigation destination changes and verify the heading.

   Note. Whenever possible, the P should perform most navigation programming duties.

2. Procedures.

   a. During pre-mission planning, the crewmembers determine the navigation data required for entry into the system. Use the WPT, Go To, and map selection pages to enter the required WPTs and construct the flight plan.

   b. During aircraft run-up, enter the appropriate data. Operate the navigation system in accordance with the operator's manual.

   Note. When the mission dictates single-pilot operation or if the P is conducting TIS operations, the above duties are performed by the P*.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or static system trainer.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references, navigation system operation manuals, and FM 3-04.240.

TASK 2410

Perform Masking and Unmasking

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with OGE PWR AVAIL.

STANDARDS: Apply appropriate common standards and the following:

1. Perform a map reconnaissance.
2. Mask the aircraft from enemy visual and electronic detection.
3. Ensure that exposure time does not exceed 10 seconds when unmasking the aircraft.
4. Maintain a sufficient distance behind obstacles to allow for safe maneuvering.
5. Move to a new location, if AVAIL, before subsequent unmasking.

DESCRIPTION:

1. Crew actions.

   a. The PC will assign observation sectors to the other crewmember to maximize the areas scanned during the time unmasked. The PC will also ensure observations are reported.

   b. The P* will remain focused outside the aircraft. The P* is responsible for clearing the aircraft and obstacle avoidance and will announce the type of masking and unmasking before executing the maneuver. The primary concern will be aircraft control while viewing the assigned sector.

   c. The P will initially focus attention inside the aircraft. The P will perform a map reconnaissance to identify natural and man-made features before the unmasking (may be accomplished in pre-mission planning or in the aircraft), brief the P* and announce when ready. Visually the P will primarily view the assigned sector, overlap the P* sector, and warn the P* of obstacles or unanticipated drift and altitude changes. The P will announce when focused inside the cockpit.

2. Procedures.

   a. Masking/unmasking in flight. Fly to the destination with the aid of the navigation system, or a map. Take MAX advantage of terrain and vegetation to prevent exposure of the aircraft to enemy visual observation or electronic detection. Maintain orientation at all times and look far enough ahead on the map for hazards. Keep aircraft exposure time to a minimum to prevent enemy visual observation or electronic detection. Radar can lock onto a target within 2 to 9 seconds.

   b. Unmasking at a HVR (vertically). Ensure that sufficient PWR is AVAIL to unmask. Apply collective until sufficient altitude is obtained to see over the mask without exceeding aircraft limitations. Maintain horizontal main rotor blade clearance from the mask in case of a PWR loss or a tactical need to mask the aircraft quickly. Keep aircraft exposure time to a minimum.

   Note. There is a common tendency to move forward or rearward while vertically unmasking and re-masking.

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   c. Unmasking at a HVR (laterally). Unmasking may be accomplished by moving laterally from the mask. HVR the aircraft sideward to provide the smallest silhouette possible to enemy observation or fire. Keep aircraft exposure time to a minimum.

   Note. When unmasking the helicopter, select a new location that is a significant distance from the previous location and 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 drift of 100 meters will make a significant difference.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations.

2. Maintaining altitude and position is more difficult when hovering above 25 feet without aircraft lights. The radar altimeter may be used to assist in maintaining altitude. Use references such as lights, tops of trees, or manmade objects above and to the front and sides of the aircraft. By establishing a reference angle to these objects, the P* can detect altitude changes by changing the viewing perspective. Hovering near ground features, such as roads, provides ideal references for judging lateral movement. However, the P* may become spatially disoriented when alternating his viewing perspective between high and low references. Therefore, the P* must rely on the P for assistance if he becomes disoriented. Regardless of the mission the P* must fly the aircraft first and then observe his sector.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references and FM 3-04.203.

TASK 2412

Perform or Describe Evasive Maneuvers

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter or orally in a classroom.

STANDARDS: Appropriate common standards and use or describe the correct maneuvers consistent with the tactical situation.

DESCRIPTION: Crew actions/procedures.

1. While performing actions on contact, the appropriate evasive maneuver must be employed whether observed or not.

2. If an evasive maneuver is required to evade enemy fire, use one or more of the following procedures described below for the type weapon encountered.

   a. Helicopters. Use the appropriate terrain flight maneuvers to break contact with or to evade threat helicopters.

   b. Heat-seeking missiles. Try to keep helicopter heat sources away from the threat. If a missile is sighted, turn the tail of the helicopter away from the missile and mask the helicopter.

   c. Antitank-guided missiles. Some missiles fly relatively slowly and can be avoided by rapidly repositioning the helicopter. If terrain or vegetation is not AVAIL for masking, remain oriented on the missile as it approaches. As the missile is about to impact, rapidly change the flight path or altitude to evade it (if PWR is AVAIL, a climb may reduce the ability of the missile to follow).

   d. Tanks and small arms. Immediately turn away from the fire toward an area of concealment. If concealment is unavailable, make sharp turns of unequal magnitude and unequal intervals and small changes in altitude to provide the best protection until beyond the effective range of hostile weapons.

   e. Jets/Fighters. When in an area where threat fighters are known or suspected to be operating, fly the helicopter at NOE altitude as much as possible. Upon sighting or sensing a fighter, try to mask the helicopter. If the fighter is alone and executes a dive, turn the helicopter toward the attacker, gain airspeed quickly and descend. This maneuver will cause the fighter pilot to increase his attack angle. Make an approximately 60° course change away from the attacker. As soon as the attacker is committed to follow the turn, make an approximately 60° course change in the opposite direction. The fighter pilot will then have to break off his attack to recover from the maneuver. Once the fighter breaks off his attack, maneuver the helicopter to take advantage of terrain, vegetation, and shadow for concealment. If the engaging fighters are a multiple element, the P* and P must maintain contact with all the fighters as they maneuver to ensure that countering one fighter attack does not make them an easy target for the second fighter.

   f. Artillery. Depart the impact area and determine CBRN requirements.

   g. Large caliber, antiaircraft fire (radar-controlled). Immediately execute a 90° turn. Do not maintain a straight line of flight or the same altitude for more than 10 seconds before initiating a second 90° turn (ensure this turn is away from the threat). An immediate descent to NOE altitude will reduce the danger.

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

Note. The wing aircraft may also perform a visual inspection to determine the extent of damage from hostile fire.

NIGHT OR NVG CONSIDERATIONS:

1. Apply common considerations.

2. Threat elements will be harder to detect. Rapid evasive maneuvers will be more hazardous. Crewmembers must maintain situational awareness. Aircraft control is the primary concern.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or the classroom.

2. Evaluation will be conducted in the aircraft or the classroom.

REFERENCES: Appropriate common references, FM 3-20.95, and FM 3-04.126.

TASK 2413

Perform Actions on Contact

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter or orally in a classroom.

STANDARDS: Appropriate common standards and use or describe the following actions on contact consistent with the tactical situation.

DESCRIPTION: Crew actions/procedures: The first crewmember to recognize a threat will immediately announce enemy contact, type (hostile fire), and location of threat. If the situation requires, employ immediate suppressive fire.

1. Deploy to cover. The P* will use the appropriate evasive maneuvers and suppressive fires for the contact. The P will assist with clearing the aircraft and retaining location of enemy.
2. Report. The P will develop and send a report to higher.
3. Maintain enemy contact. Both crewmembers will continue to observe the enemy using aerial observation and masking techniques. At times, it may be necessary to lose visual with the enemy to ensure aircraft is safely masked from the enemy.
4. Develop the situation. Use various reconnaissance techniques as appropriate. Reconnaissance by fire-both direct and indirect may be used to develop the situation.
5. Choose a course of action. This is usually briefed or understood from the tactical order or mission brief. The course of action may be anything from a hasty bypass to a hasty attack based upon assets AVAIL and the end state of the mission.

NIGHT OR NVG CONSIDERATIONS:

1. Apply common considerations.
2. Threat elements will be harder to detect. Rapid evasive maneuvers will be more hazardous. Crewmembers must maintain situational awareness. Aircraft control is the primary concern.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or in the classroom.
2. Evaluation will be conducted in the aircraft or in the classroom.

REFERENCES: Appropriate common references, FM 3-20.95, and FM 3-04.126.

TASK 2471

Perform Target Handover

CONDITION: In an OH-58A/C or TH-67 helicopter or in a classroom environment.

STANDARD: Apply appropriate common standards and the following:

1. Utilize the five elements of a target handover.
2. Utilize COMM procedures that will best accomplish the mission.
3. If necessary, perform security for the engaging unit.

DESCRIPTION: Crew actions/procedures. A target handover is a means to positively provide the warning of a target, the identity of the target, the location of the target and if necessary, engagement of a target to a wingman, an attack helicopter or a ground unit, using the following elements:

1. Alert and Target Description. This alerts the receiving element to the presence of and a description of the target.
2. Target Location. This provides the receiving element with the target location. Location may be a grid coordinate, a direction and distance, a laser spot, a prominent manmade feature or a prominent terrain feature.
3. Method of Engagement/Attack. This provides the receiving element with a planned scheme of maneuver or fire distribution plan.
4. Execution. This provides the receiving element the situational awareness needed to assess the engagement technique to utilize to service the target (i.e., At My Command, Heading 270°, Running Fire, HVR Fire, Diving Fire, etc).
5. Post Engagement/Attack Actions. This provides the receiving element a plan for further action. There may be a need to re-attack the target or exit the engagement area.

> ***Note.*** The five elements of the target handover format should be used when possible. In a situation requiring immediate suppressive fire from a wingman or supporting aircraft, the minimum information required is:

a. Target description.

b. Direction from the aircraft being engaged (magnetic azimuth or clock position).

c. Range from the aircraft being engaged.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft or academically.
2. Evaluation may be conducted in the aircraft or academically.

REFERENCES: Appropriate common references FM 3-04.140 and FM 3-04.126.

TASK 2530

Conduct Vehicle/Vessel Observation

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. P* will—

   a. Maintain airspeed as necessary.

   b. Maintain scan of all sectors outside the aircraft.

   c. Ensure sufficient aircraft PWR is AVAIL.

2. P will—

   a. Correctly identify and acquire vehicle/vessel.

   b. Maintain visual/TIS/HPIS contact with designated target.

   c. Correctly direct P* to maneuver aircraft to aid in maintaining target contact.

DESCRIPTION:

1. Crew actions.

   a. The crew will select and announce an altitude, airspeed, and flight path necessary to maintain visual/TIS/HPIS contact with the designated vehicle/vessel. The crew will perform a visual/thermal identification of the vehicle/vessel. The P* must maneuver the aircraft as necessary to maintain visual/TIS/HPIS contact with the vehicle/vessel.

   b. The P will operate selected mission equipment as necessary to gain information and maintain observation of the vehicle/vessel. Since the P will be concentrating on observing the vehicle/vessel, the P* must ensure that clearance of all other aircraft and ground obstacles is maintained by continually scanning outside the aircraft. The crew will announce “break off” or “disregard” at the completion of the operation.

2. Procedures.

   a. The crew must acquire the target. Identify the vehicle/vessel of interest to the supported LEA. As soon as possible, note the distinctive characteristics of the target under each type of applicable observation mode. For example, unaided mode characteristics might include color, vinyl top, brake light in rear window, and broken tail light lens. NVG mode characteristics may include a misaligned headlight and the presence of a license plate light. The thermal signature from the target will indicate engine location and a heat pattern.

   b. The crew must maintain target observation. To minimize the risk of the aircraft being detected, use the highest altitude possible that allows positive contact with the target. Increased urban background noise may camouflage lower altitude aircraft sounds that would be more readily noticed in a rural environment.

   c. The crew must maintain situational awareness. General aviation traffic remains a hazard and must be "seen and avoided." The pilot must remain alert to changes in weather conditions and airspace.

   d. Communication among crewmembers is the key to success for all TIS operations. The high P* workload in this task cannot be safely accomplished without effective cockpit communication and assistance from the P. It is likely that neither the P* nor the P on TIS will be able to maintain simultaneous contact with the target, communicate and coordinate their actions. One crewmember should maintain contact with the target at all times.

   Note. The P* should refrain from fixating on the DMU during TIS operations.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations.
2. NVG may become ineffective when a target moves into an urban, high ambient light level environment.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Aircraft operator's manual, FLIR operator's manual, Wulfsberg GWS operator's manual, FM 3-04.203, and **Task 1472**.

TASK 2540

Perform Fixed Target Observation

CONDITIONS: In an OH-58A/C helicopter.

STANDARDS: Apply appropriate common standards and the following:

1. P* will—
   a. Maintain airspeed as necessary.
   b. Maintain scan of all sectors outside the aircraft.
   c. Maintain the aircraft clear of all aircraft and ground obstructions.
   d. Ensure sufficient aircraft PWR is AVAIL and that aircraft limits are not exceeded.
2. P will—
   a. Correctly identify and acquire target.
   b. Maintain visual/TIS contact with designated target.
   c. Correctly direct P* to maneuver aircraft to aid in maintaining target contact.

DESCRIPTION:

1. Crew actions.

   a. The crew will select and announce an altitude, airspeed, and flight path necessary to maintain visual/TIS/HPIS contact with the designated target. The crew will perform a visual/thermal identification of the target. The P* must maneuver the aircraft as necessary to maintain visual/TIS/HPIS contact with the target.

   b. The P will operate selected mission equipment as necessary to gain information and maintain observation of the target. Since the P will be concentrating on observing the target, the P* must ensure clearance of all other aircraft and ground obstacles is maintained by continually scanning outside the aircraft. The crew will announce “break off” or “disregard” at the completion of the operation.

2. Procedures

   a. The crew must acquire the target. Identify the target of interest to the supported LEA. As soon as possible, note the distinctive characteristics of the target under each type of applicable observation mode.

   b. The crew must maintain target observation. Characteristics of the target should be noted early in the observation to aid in maintaining contact. To minimize the risk of the aircraft being detected, use the highest altitude possible that allows positive contact with the target. Increased urban background noise may camouflage lower altitude aircraft sounds that would be more readily noticed in a rural environment.

   c. Communication among crewmembers is the key to success for all TIS operations. The high P* workload in this task cannot be safely accomplished without effective cockpit communication and assistance from the P. It is likely that neither the P* nor the P on TIS will be able to maintain simultaneous contact with the target, communicate and coordinate their actions. One crewmember should maintain contact with the target at all times.

> **CAUTION**
>
> The P* will not use the TIS monitor to maintain obstacle clearance; however, the P may give cues received from the TIS to the P* to aid in obstacle clearance.

CAUTION

If flight is conducted at or below ETL, the P* must ensure that OGE PWR is AVAIL, heading control is positively maintained, and aircraft limits are not exceeded. Due to the lack of outside pilot references to aid in maintaining aircraft position and altitude, spatial disorientation may occur if ground references are lost or if proper scanning techniques are not used.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply common considerations and the following:
2. NVG may become ineffective when viewing a target in a high ambient light level environment.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.
2. Evaluation will be conducted in the aircraft.

REFERENCES: AVM operator's manual, TIS operator's manual, HPIS operator's manual, aircraft operator's manual, and **Task 1472**.

TASK 2600

Operate the High Powered Illumination System

CONDITIONS: In an OH-58A/C helicopter equipped with HPIS or in a classroom environment.

STANDARDS:

1. Crew duties.
   a. Operate the HPIS.
   b. Maintain contact with the target using the HPIS.
   c. Maintain situational awareness.
2. P* will—
   a. Maintain scan of all sectors outside the aircraft.
   b. Maintain aircraft clearance.
3. P will maintain observation with TIS if P* performs observation with the HPIS.

DESCRIPTION:

1. Crew actions.

   a. The P* will remain focused outside the aircraft throughout the maneuver. The P* has primary responsibility for obstacle and aircraft avoidance, and positioning the aircraft to maintain contact with the target. If the P* is operating the HPIS, he must maneuver the aircraft as necessary to maintain contact with target.

   b. The P is responsible for assisting the P* with navigation, obstacle and aircraft avoidance, and assisting the P* in maintaining target contact. If operating the HPIS the P must direct the P* as necessary to maintain observation on the target with the HPIS.

   c. When the P* is operating the HPIS and the P is operating the TIS, the P* is responsible for; navigation, obstacle and aircraft avoidance.

2. Procedures.

   a. Acquire the target. Locate and identify the target. Maneuver the aircraft as necessary to place the HPIS on the target.

   b. Maintain target observation. Characteristics of the target should be noted early in the observation to aid in maintaining contact with the target. Appropriate altitude and lateral separation will vary greatly depending on the target's environment and the threat. Urban operations may require closer proximity to the target than remote or rural observation.

   c. Maintain situational awareness. The crew must maintain situational awareness. General aviation traffic remains a hazard and must be "seen and avoided." The crew must remain alert to changes in weather conditions and airspace.

   d. Correctly perform crew coordination actions. Communication among crew members is the key to success for all HPIS operations. The high P* workload in this task cannot be safely accomplished without effective cockpit communication and assistance from the P. It is likely that neither the P* nor the P on TIS will be able to maintain contact with the target without communicating and coordinating their actions, one of the two crew members should have contact with the target at all times.

NIGHT OR NIGHT VISION GOGGLE CONSIDERATIONS: Apply common considerations.

Note. The P* should refrain from fixating on the illuminated target during HPIS operations.

Note. Position the HPIS to reduce glare in the cockpit.

Note. Refer to current AWR for operational restrictions.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft or academically.
2. Evaluation will be conducted in the aircraft.

REFERENCES: HPIS operators manual and the HPIS AWR.

Chapter 5

Maintenance Test Pilot Tasks

This chapter describes the tasks that are essential for maintaining maintenance crewmember skills. It defines the task title, number, conditions, and standards by which performance is measured. A description of crew actions, along with training and evaluation requirements is also provided. Tasks described in this chapter are to be performed by qualified OH-58/TH-67 MPs IAW AR 95-1. This chapter contains tasks and procedures to be used by contractor MPs IAW AR 95-20. If discrepancies are found between this chapter and TM 1-1520-228-MTF or TH-67 MTF, the MTF takes precedence.

5-1. TASK CONTENTS.

a. **Task number and title.** Each ATM task is identified by a ten-digit SAT number and title that corresponds to the MP tasks listed in Chapter 2 (table 2-4, page 2-7).

b. **Conditions.** The conditions specify the common wartime or training/evaluation conditions under which the MP tasks will be performed. They describe the important aspects of the performance environment. All conditions must be met before task iterations can be credited.

(1) Common conditions are—

(a) In a mission aircraft with mission equipment and crew, items required by AR-95-1, required publications (operator's manual CL, navigational and terrain maps), and special test flight equipment required by the appropriate technical manuals.

(b) Under VMC.

(c) Day, night and NVD employment.

(d) In any terrain or climate.

(e) In CBRN environment with mission protective posture equipment used.

(f) In an electromagnetic environment.

(2) Common training/evaluation conditions are—

(a) When a ME is require for training of the task, then that individual will be at one set of the flight controls while the training is performed.

(b) Unless otherwise specified in the conditions all in-flight training and evaluation will be conducted under VMC.

(c) Night unaided and NVG use may be a condition for any flight task when NVG are listed as a condition; task standards will be the same as those described for performance of the task without using NVG.

c. **Standards.** The standards describe the minimum degree of proficiency or standard of performance to which the task must be accomplished. Standards are based on ideal conditions to which the task must be accomplished. The following common standards apply to all MP tasks.

(1) Perform procedures and checks in sequence IAW TM 1-1520-228-MTF or TH-67 MTF, as required.

(2) Brief the rated crewmember (RCM) or non-crewmember (if applicable) on the procedures and applicable warnings, cautions, and notes for the task to be performed.

(3) Perform crew coordination actions per the task description and Chapter 6.

(4) Assess and address any malfunctions or discrepancies as they occur and apply appropriate corrective actions or troubleshooting procedures.

(5) If the RCM or non-crewmember is AVAIL, use the call and response method when performing checks and announce check completion.

(6) Upon completion of all tasks record required data on the MTF check sheet.

d. **Description.** The description explains how the elements of the task should be done to meet the standards. When specific crew actions are required, the task will be broken down into crew actions and procedures as follows:

(1) Crew actions. These define the portions of a task to be performed by each crewmember to ensure safe, efficient, and effective task execution. P* indication does not imply PC or MP duties. When required, P* or MP responsibilities are specified. All tasks in this chapter are to be performed only by qualified MEs, MPs, or student maintenance test pilots undergoing qualification training as outlined in AR 95-1. The MP is the PC in all situations, except when undergoing training or evaluation by an ME. For all tasks, MP actions and responsibilities are applicable to MEs. When two MEs are conducting training/evaluation together, or two MPs are jointly performing test flight tasks, the mission brief will designate the aviator assuming PC responsibilities.

(2) Procedures. This section describes the actions that the MP/ME performs or directs the RCM/non-crewmember to perform in order to execute the task to standard.

e. **Considerations.** This section defines training, evaluation, and other considerations for task accomplishment under various conditions.

(1) HVR WORK NIGHT OR NIGHT VISION GOGGLES: Movement over areas of limited contrast, such as tall grass, water, or desert tends to cause spatial disorientation. To avoid spatial disorientation and unanticipated drift, seek HVR areas that provide adequate contrast with good references and apply proper scanning techniques. When possible designate a specific area clear of obstacles or hazards that far exceeds the required space to perform the HVR checks. hovering OGE reduces AVAIL ground references and may increase the possibility of spatial disorientation. Use of the IR searchlight in areas of low contrast may be necessary if conditions permit. When the use of white light is anticipated, positioning should be taken into consideration to ensure the P* does not focus his attention directly where the light is pointed. Be prepared to transition to instruments and execute an instrument takeoff if ground reference is lost. The crewmember not on the controls should assist in completing all required checks. Visual obstacles, such as shadows, should be treated the same as physical obstacles.

(2) IN-FLIGHT WORK NIGHT OR NIGHT VISION GOGGLES: All crewmembers must be focused primarily outside for obstacle avoidance. Due to the intensity of crew coordination required during certain checks a qualified RCM or noncrewmember must be utilized to record the numerical data gathered and perform airspace surveillance duties as required/briefed. If using NVG, a RCM is required. Use of supplemental lighting to positively identify flight control position and measurements during certain checks is highly recommended. Due to speeds involved while performing these checks, consideration of altitude appropriate for these task must be made. To better maintain aircraft control during certain maneuvers, unaided flight is recommended when altitude is AVAIL.

(3) SNOW/SAND/DUST: If visual references deteriorate to an unacceptable level, apply sufficient PWR and execute a takeoff. If a takeoff is not feasible, try to maneuver the aircraft forward and down to the ground to limit the possibility of touchdown with sideward or rearward movement to avoid spatial disorientation and unanticipated drift, seek HVR areas that provide adequate contrast with good references and apply proper scanning techniques. The P should keep the P* informed of the location of the snow/sand/dust cloud. Consider the effects of snow/sand/dust cloud on personnel and equipment in/around the landing area. Use of the searchlight may cause spatial disorientation while in blowing snow/sand/dust.

Note. Use of supplemental lighting to acquire specific measurement may be required.

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f. **Common single pilot considerations.** The following common single pilot considerations apply to all tasks in this chapter where specific single pilot considerations have not been identified:

(1) Single pilot NVG MTF flight operations are prohibited.

(2) When a non-crewmember is on board, the MP will brief and assign him duties appropriate to his proficiency level.

(3) Except for rated aviator duties, the RCM crew actions described in the task may be accomplished by the non-crewmember at the direction of the MP.

g. **Training and evaluation requirements.** Some of the tasks incorporate more than one check from TM 1-1520-228-MTF/TH-67 MTF. The evaluator may select additional checks for evaluation.

(1) Training and evaluation requirements define whether the task will be trained or evaluated in the aircraft or academic environment.

(2) Training and evaluations will be conducted only in the listed environments, but may be done in any or all combinations. Listing only "aircraft" under evaluation requirements does not preclude the ME from evaluating elements of the task academically to determine depth of understanding or planning processes. However, the evaluation must include hands-on performance of the task in the listed environment(s). If one or more checks are performed unsatisfactorily, the task will be graded unsatisfactory. However, when the task is reevaluated, only those unsatisfactory checks must be reevaluated.

h. **References.** The references are sources of information relating to that particular task. In addition to the common references listed in Chapter 4, the following references apply to all MP tasks:

(1) Aircraft logbook and historical records.

(2) TM 1-1500-328-23.

(3) DA Pam 738-751.

(4) TM 55-1520-228-10.

(5) TM 1-1520-228-CL.

(6) TM 1-1520-228-MTF.

(7) TH-67 Operators Supplement.

(8) TH-67 Operators Supplement CL.

(9) TH-67 MTF Manual.

(10) TM 55-1520-228-23 series manuals.

(11) TM 55-2840-241-23&P.

(12) TM 11-1520-228-23 series manuals.

(13) TM 55-1500-342-23.

(14) TM 1-6625-742-13&P.

(15) Applicable airworthiness directives or messages from AMCOM.

5-2. TASKS LIST

a. **Standards versus descriptions.** MPs and MEs are reminded that task descriptions may contain required elements for successful completion of a given task. When a standard for the task is to "brief the RCM on the conduct of the maneuver" (for example, those crew actions specified in the description are required). Attention to the use of the words, will, should, or may throughout the text of a task description is crucial.

b. **Critical tasks.** The following numbered tasks are OH-58A/C or TH-67 maintenance test pilot critical tasks. Unless noted in conditions, the series designator OH-58A/C or TH-67 applies to all versions of the applicable helicopter.

TASK 4000

Perform Prior to Maintenance Test Flight Checks

CONDITIONS: In an OH-58A/C or TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Perform the pre-flight inspection IAW TM 55-1520-228-10/TM 1-1520-228-CL/TH-67 operators supplement or TH-67 operator's supplement CL.
2. Determine the suitability of the aircraft for flight and the mission to be performed.
3. Determine the maneuvers, checks, and tasks required during the test flight (TF).

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure that a thorough pre-flight inspection is conducted. The TM 1-1520-228-CL/TH-67 operators supplement CL may be used to conduct the pre-flight inspection; however the inspection will be conducted to the detail level of the TM 55-1520-228-10 or TH-67 operators supplement (Chapter 8). The MP may direct the RCM if AVAIL, to complete such elements of the aircraft pre-flight inspection as are appropriate, but verify that all checks have been completed. The MP will ensure that the aircraft logbook forms and records are reviewed and appropriate entries made as IAW DA Pam 738-751. The MP will determine the checks necessary for the maintenance test flight. The MP will brief the RCM or non-crewmember and any additional support personnel concerning operation on or around the helicopter during ground operations and will ensure that ground communication capability is adequate. The MP will stress any applicable ground or airborne safety considerations or procedures during the briefing. The MP will ensure that a final walk-around inspection is completed prior to flight.

   b. The RCM should complete the assigned elements and report the results to the MP.

2. Procedures.

   a. Review the aircraft forms and records to determine the necessary checks and tasks to be performed. Use additional publications and references as necessary. Conduct a risk assessment of the mission. Pre-flight the aircraft with special emphasis on areas or systems where maintenance was performed. Verify all test equipment is correctly installed and secured as applicable.

   b. Brief the RCM or non-crewmember, if AVAIL, on crew coordination responsibilities and conduct of the mission. Emphasize safety procedures to be performed during maintenance tasks or maneuvers the RCM or non-crewmember may be unfamiliar with.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply the appropriate common considerations and the following:

2. A white lens flashlight should be used if performing the pre-flight inspection during the hours of darkness. Hydraulic leaks, oil leaks, and other defects are difficult to see using a flashlight with a colored lens. If circumstances permit, accomplish pre-flight inspection during daylight hours.

SNOW/SAND/DUST CONSIDERATIONS: If the aircraft pre-flight has been conducted any time other than immediately prior to flight, consideration should be given to reinstalling aircraft covers to prevent accumulation of snow/sand/dust in aircraft and equipment. Ensure all ice/snow accumulations are removed from the aircraft before starting engine.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4084

Perform Before-Starting Engine Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the P to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the P on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the P to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and P are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or P performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the P. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP or P will announce that the task has been completed.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply the appropriate common considerations.

2. Before starting the engine, ensure that all internal and external lights are operational and properly set. Internal lighting levels must be high enough so instruments can be seen clearly.

SNOW/SAND/DUST CONSIDERATIONS: Ensure all rotating components, inlets and exhausts are clear of ice and/or snow prior to starting engine.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4088

Perform Starting Engine Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter.

STANDARDS: Appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the P to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP will announce that the task has been completed as follows: If these checks are performed during an MP or ME evaluation, the evaluated crewmember should demonstrate knowledge of the system, published operational checks, and knowledge of published charts, graphs, and work sheets.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply the appropriate common considerations.

2. Before starting the engine, ensure that all internal and external lights are operational and properly set. Internal lighting levels must be high enough so instruments can be seen clearly and the aviator can start the engine without exceeding operating limitations. The crewmember not on the controls should assist in clearing the aircraft and assist in completing all required checks.

SNOW/SAND/DUST CONSIDERATIONS: Ensure all rotating components and inlets/exhaust are clear of ice and/or snow prior to starting engine.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4090

Perform Engine Run-Up Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP will announce that the task has been completed.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply the appropriate common considerations.

2. The MP will periodically scan the surrounding area to ensure the aircraft remains clear throughout the checks.

SNOW/SAND/DUST CONSIDERATIONS: Ensure a buildup of ice and/or snow has not occurred directly affecting the aircraft.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4128

Perform Before-Takeoff Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP or RCM or non-crewmember will announce that the task has been completed.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply the appropriate common considerations.

2. The MP will periodically scan the surrounding area to ensure the aircraft remains clear throughout the checks.

SNOW/SAND/DUST CONSIDERATIONS: Ensure a buildup of ice and/or snow has not occurred directly affecting the aircraft.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4132

Perform Takeoff to a Hover Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with before takeoff checks completed and given the aircraft MFT manual/CL.

STANDARDS: Appropriate common standards and maintain a 3-foot HVR altitude, ±1 foot.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Bring the aircraft to a 3-foot HVR and note cyclic, collective, and pedal control response. Note that the apparent CG is normal and that no excessive control displacement is required (cyclic and pedal positions are normal for the conditions).

      (2) Verify that all system instruments are in the normal ranges for conditions, to include PWR appropriate for conditions and note any N^2 droop.

      (3) Before proceeding to the TF HVR area check the parking area for indications of fluid leakage from the aircraft.

NIGHT OR NIGHT VISION GOGGLES COSIDERATIONS:

1. Apply appropriate common considerations.

2. If sufficient illumination or NVG resolution does not exist creating a reduction in visual references during the takeoff and throughout the ascent, the MP should perform an altitude over-airspeed takeoff to ensure obstacle clearance and reposition to an area that provides better contrast. The crew should know the surface wind direction and velocity to maintain the desired ground position.

SNOW/SAND/DUST CONSIDERATIONS: As the aircraft leaves the surface, maintain heading with the pedals and a level attitude with the cyclic to maintain a vertical ascent. In some cases, applying collective to blow away loose snow/sand/dust from around the aircraft is beneficial before performing this maneuver. The MP should be prepared to transition to instruments if ground reference is lost at night, use of the searchlight may cause spatial disorientation while blowing snow/sand/dust. The RCM and/or noncrewmember should be prepared to transition to instruments if ground references are lost to aid the MP as necessary.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4142

Perform Hover Power Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL with the takeoff-to-a-hover check complete.

STANDARDS: Appropriate common standards and the following:

1. Position the aircraft into the wind.
2. Maintain a 2-foot HVR altitude, ±1 foot.
3. Record the required readings.
4. Check to ensure that the indicated TQ is within 4% of the PPC.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM of non-crewmember will announce that the task has been completed as follows:

      (1) Establish a stabilized 2-foot HVR into the wind.

      (2) Note and record the TQ, TOT and N^1. Confirm that readings are normal for the conditions.

      (3) Compare the recorded data with the PPC IAW the pilot HVR PWR check.

NIGHT OR NIGHT VISION GOGGLES COSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4150

Perform Hovering Control Rigging Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Hovering turns.
   a. Maintain a 3-foot HVR altitude, ±1 foot.
   b. Position the aircraft into the wind.
   c. Turns not to exceed the rate of 90° in 4 seconds.
2. Sideward flight checks.
   a. Maintain heading into the wind.
   b. Maintain a 3-foot HVR altitude, ±1 foot.
   c. Limit ground speed to a MAX of 5 knots.
3. Forward hovering flight checks - Maintain 5-foot altitude ±1 foot during check.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM of non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or RCM of non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP or RCM or non-crewmember will announce that the task has been completed.

Note. Confirm the aircraft maneuver area is sufficient and is clear prior to initiation of each of the following procedures:

(1) Hovering turns. Establish a stabilized 3-foot HVR into the wind. Note the aircraft heading. Make a smooth and controlled pedal turn 90° from the initial heading at a constant rate of turn. Smoothly return the aircraft to the initial heading. During the maneuver note that excessive pedal input, relative to current wind conditions, is not required during the maneuver. Repeat the check in the opposite direction.

(2) Sideward hovering flight checks. Reestablish as necessary, a stabilized 3-foot HVR into the wind. Smoothly initiate sideward flight to either side. During the maneuver note that no excessive control inputs are required, relative to current wind conditions, and that desired aircraft response is achieved. Neutralize the cyclic, and the aircraft should drift to a stop. Repeat the check to the opposite side.

(3) Forward hovering flight checks. Establish an approximate 5-foot HVR into the wind. While maintaining a 5-foot HVR height, apply sufficient forward cyclic to accelerate to ETL. Check cyclic response and rigging, abnormal vibrations, and/or flight control displacement.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4165

Perform Pylon Isolation Mount Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Maintain a 3-foot HVR altitude, ±1 foot.
2. Induce an extremely low frequency vibration into the aircraft.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP or RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Establish a stabilized 3-foot HVR into the wind.

      (2) Initiate the check by displacing the cyclic fore and aft approximately one to two inches at a rate that will induce an extremely low frequency vibration.

      (3) Once the cyclic is neutralized the oscillations should dampen within five cycles, no abnormal vibrations or engine surges should occur.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. The lack of visual references at night reduces the aviator's ability to estimate height above ground and drift.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4170

Perform PWR Cylinder Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS:

1. Appropriate common standards.
2. Maintain a 10-foot HVR altitude, +5 foot, –2 foot.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

   c. The MP will brief the RCM or non-crewmember on the use of the terms “cycle”, “off”, and “check complete”, and the emergency procedures to be performed in the event of a hydraulic system failure. The MP will direct the RCM or non-crewmember to assist in clearing the aircraft and with monitoring the master caution panel.

      (1) Land the helicopter to conduct the briefing.

      (2) Brief the RCM or non-crewmember to identify and hold the HYD SYS switch throughout the check.

      (3) Brief the RCM or non-crewmember on the commands RCM or non-crewmember should expect to hear and the resultant actions RCM or non-crewmember will perform.

      (4) Direct the RCM or non-crewmember to confirm during the check that the HYD PRESS caution light does not illuminate.

(5) Select HOT MIC on both intercommunication systems (ICS), verify the aircraft maneuver area is clear and that sufficient space is AVAIL in the event of hydraulics malfunction.

(6) Establish a stabilized 10-foot HVR into the wind.

(7) Check the right servo by smoothly and repeatedly displacing the cyclic at a moderate rate, approximately 6 inches to either side of center, diagonally from the left-rear to right-forward quadrant.

(8) During the maneuver, confirm that movement is unrestricted. Repeat the check for the left servo by displacing the cyclic from the right rear to the left-forward quadrant.

(9) Return the aircraft to a stabilized 3-foot HVR. Adjust ICS switches as necessary.

SINGLE PILOT CONSIDERATIONS: This check will not be performed without an additional crewmember onboard. Either an additional RCM or non-crewmember is required to be on board to assist with HYD SYS switch functions.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.
2. The lack of visual references at night reduces the aviator's ability to estimate height above ground and drift.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4172

Perform Engine Response Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards. Do not exceed 50 feet AGL.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM of non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP or RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP or RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Do not exceed a 50-foot HVR height during these flight maneuvers.

      (2) Establish a stabilized 3-foot HVR into the wind and perform the following procedure:

         (a) Make a positive increase in the collective pitch.

         (b) Confirm that the engine responds smoothly and rapidly, that N^1 increases in less than 1 second and the N^2 recovers to 100% within 5 seconds.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Several attempts may be required to establish effective crew coordination measures to confirm proper aircraft and aircraft systems reactions and responses. Use of a call and response method may be required. The lack of visual references at night reduces the aviator's ability to estimate height above ground and drift.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4194

Perform Flight Instruments Check

CONDITIONS: In an OH-58A/C or in a TH-67(I) helicopter with all main rotor vibrations minimized and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards:

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Announce initiation of the check and verify proper indications are displayed and there are no excessive fluctuations of instrument indications.

      (2) Perform functional checks by using timed turns, climbs, descents, and known PWR settings verifying the instruments correlate with other supporting instrument indications.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Use of a call and response method may be required. The MP must be prepared to increase their airspace surveillance requirements as the RCM and/or noncrewmember may be focused on systems instruments during the maneuver.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4210

Perform Takeoff and Climb Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Perform check at 60 KIAS.
2. R/C - 500 FPM.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Confirm the aircraft maneuver area is clear. Perform before-takeoff checks and execute a normal takeoff.

      (2) During the takeoff and climb, verify that flight control positions and instruments are normal for conditions and there are no unusual vibrations.

      (3) Initiate a fuel consumption check when in straight and level flight.

NIGHT OR NIGHT VISION GOGGLES (NVG) CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Use of a call and response method may be required. The MP must be prepared to increase their airspace surveillance requirements as the RCM or noncrewmember may be focused on system instruments during the maneuver. The MP should know the surface wind direction and velocity as this will assist the MP in establishing the crab angle required to maintain the desired ground track.

SNOW/SAND/DUST CONSIDERATIONS:

1. Apply appropriate common considerations.

2. As the aircraft clears the snow/sand/dust cloud and all barriers, accelerate to climb airspeed and trim the aircraft.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4232

Perform Control Rigging Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MFT manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Maintain airspeed of 100 ±5 KIAS, into the wind.
2. Maintain TQ at 65%, ±2% (OH-58A/C).
3. Maintain TQ required to maintain 100 KIAS (TH-67).
4. Maintain the aircraft in trim.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Select an altitude that will allow for safe recovery.

      (2) Establish trimmed flight into the wind at 65% TQ and 100 KIAS (OH-58A/C).

      (3) Establish trimmed flight into the wind at a TQ value to maintain 100 KIAS (TH-67).

      (4) Select FORCE TRIM to ON, (if installed on the TH-67) relax cyclic pressure and note that the cyclic remains in place.

      (5) When the cyclic check is complete, select the FORCE TRIM to OFF.

(6) While maintaining the aircraft in trim, confirm the pilot's station anti-torque pedal position is 0.5 (1/2) inches right pedal forward.

(7) Relax the pressure on the anti-torque pedals and check for pedal creep.

NIGHT OR NIGHT VISION GOGGLES (NVG) CONSIDERATIONS:

1. Apply appropriate common considerations.

2. The RCM or noncrewmember must be prepared to provide supplemental lighting for the MP to observe the anti-torque pedal measurements on the right side. The RCM or noncrewmember must be prepared to increase their airspace surveillance requirements as the MP may be focused on the flight control displacements and system instruments during the maneuver.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4236

Perform Autorotation Rotor Revolutions Per Minute Checks

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Select a suitable autorotation area that will permit a safe descent and emergency touchdown landing.

2 Maintain airspeed of 55 ±5 knots (OH-58A/C) or 52 ±5 knots (TH-67) KIAS, in trim, into the wind, during autorotation.

3. Establish a climb prior to 500 feet AGL while maintaining airspeed greater than 50 KIAS.

4. Correctly determine proper rotor RPM for environmental conditions and GWT.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Confirm that the heater and engine ANTI-ICE switches are OFF.

      (2) Maneuver the aircraft to establish an upwind track to the selected area. Establish 55 KIAS (OH-58A/C) or 52 KIAS (TH-67), level flight, in trim, at an altitude that will allow safe recovery. Confirm the aircraft maneuver area is clear.

      (3) Contact flight following as appropriate and announce initiation of the maneuver.

      (4) Smoothly lower the collective to the full-down position and confirm that rotor RPM remains within limits.

(5) Retard the throttle to the engine-idle position and confirm free-wheeling clutch disengagement and that N^1 stabilizes.

(6) Confirm the aircraft is in trim and that rotor rpm is stabilized within the normal operating range.

(7) Verify the cyclic position is normal for conditions, and sufficient right pedal remains. Note any increase or decrease in main rotor vibrations, TQ indications are at or near zero % and that no warning or cautions lights are illuminated.

(8) Verify and record rotor RPM.

(9) Smoothly advance the throttle to full open, adjusting the collective as necessary to maintain rotor rpm within limits. During PWR application, confirm clutch reengagement.

(10) Increase the collective and establish a climb prior to descending below 500 feet AGL.

c. Contact flight following as appropriate.

d. Compare recorded rotor RPM required for aircraft WT and density altitude. Adjust as required.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Attitude control is critical during night autorotation due to the lack of references. Use of a call and response method may be required. The RCM or non-crewmember must be prepared to increase their airspace surveillance requirements as the MP may be focused on the flight control displacement and system instruments during the maneuver.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4238

Perform Engine Performance Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Select a suitable area that will permit a safe descent and emergency landing.
2. Establish a climb and maintain 70 ±5 knots indicated airspeed (KIAS) (OH-58A/C) or 52 ±5 KIAS (TH-67), in trim, into the wind.
3. Achieve MAX PWR AVAIL without exceeding aircraft limitations.
4. Correctly analyze engine performance check (EPC) data.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP and RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Confirm that the heater and engine ANTI-ICE switches are OFF. Set altimeter to 29.92.

      (2) Turn aircraft into the wind and initiate a climb at 70 KIAS (OH-58A/C) or 52 KIAS (TH-67) to a pre-determined altitude that has a predicted MAX TQ AVAIL of less than 100%.

      (3) At approximately 300 feet prior to reaching the test altitude, slowly increase the collective to achieve the MAX limit of TOT, N^1 or TQ with N^2 stabilized at 100% when aircraft reaches test altitude.

      (4) Upon reaching test altitude record the TQ, N^1 and TOT.

(5) Verify the outside air temperature at the selected test altitude, reset the altimeter to the current altimeter setting and determine if the required TQ was attained.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Use of a call and response method may be required. The RCM or non-crewmember must be prepared to increase their airspace surveillance requirements as the MP may be focused on system instruments during the maneuver. The MP must be prepared to increase their airspace surveillance requirements as the rated RCM or non-crewmember may be focused on systems instruments during the maneuver.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4244

Perform Hydraulics -Off Check

CONDITIONS: In an OH-58A/C or TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. Maintain airspeed of 70 ±10 KIAS (OH-58A/C) or 65 ±5 KIAS (TH-67).
2. Maintain the aircraft in trim.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged. The MP will brief the RCM or non-crewmember on the use of the terms "hydraulics off", "hydraulics on", and "check complete."

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. The MP will direct RCM or non-crewmember to identify the hydraulic system (HYD SYS) switch before instructing him to select the system to either off or on. Brief RCM or non-crewmember to maintain his hand on the switch until he is told to remove it and not to move the switch until directed to do so. Once the tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Select an altitude that will allow for safe recovery in the event of a hydraulics failure. Establish level flight, in trim, into the wind at 70 KIAS (OH-58A/C) or 65 KIAS (TH-67) noting cruise PWR.

      (2) Direct the RCM or non-crewmember to identify and move the HYD SYS switch to the OFF position using the briefed command.

      (3) Confirm the HYD PRESS (pressure) caution light and master caution lights are illuminated. If abnormal forces are not encountered, direct the RCM or non-crewmember to remove his hand from the HYD SYS switch and reset the master caution light.

(4) Do not exceed any aircraft limitations during the following maneuvers. Confirm the aircraft maneuver area is clear and then check controllability by making shallow left and right turns. Establish level flight. Maintain the aircraft in trim during the following collective checks. Raise the collective to 83% TQ (OH-58A/C) or 90% TQ (TH-67) to insure the ability to increase collective is present prior to reduction, lower the collective and verify that TQ can be decreased to at least 17% (OH-58A/C) or 10% (TH-67). Raise the collective and verify that TQ can be increased to at least cruise PWR TQ. Excessive force should not be necessary to achieve either of the TQ settings.

(5) Upon completion of the collective checks, reestablish level flight.

(6) Relax pressure on the flight controls. Direct the RCM or non-crewmember to again identify and move the HYD SYS switch to the HYD SYS position using the briefed command.

SINGLE PILOT CONSIDERATIONS: This check will not be performed without an additional crewmember onboard. Either an additional RCM or non-crewmember is required to be on board to assist with HYD SYS switch functions. Except for rated aviator duties, the RCM crew actions described above may be accomplished by the non-crewmember at the direction of the MP.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. The RCM or noncrewmember must be prepared to increase their airspace surveillance requirements as the MP may be focused on flight control displacements and system instruments during the maneuver.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4252

Perform Vibration Analysis

CONDITIONS: In an OH58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards and the following:

1. During 2/revolutions vertical vibration check, maintain TQ required to induce the vibration.
2. During increasing airspeeds, do not exceed computed velocity never exceed (airspeed limit [VNE]).

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Analysis during increasing airspeeds. While maintaining straight and level flight, progressively increase airspeed, from70 KIAS to VNE in 10-knot increments. Note any increase or decrease in vibration levels.

      (2) Perform a letdown check at airspeed where vibration is present to determine whether the vibration is mechanical (pitch change links), or aerodynamic (trim tabs). If vibration dissipates or goes away it is most likely aerodynamic. If does not dissipate or go away it is most likely mechanical. Terminate maneuver if vibration becomes severe.

      (3) 2/revolutions vertical vibration check. A 1/revolution vibration will normally mask a 2/revolution vibration.

         (a) Establish level flight, in trim, at the airspeed/TQ where the 2/revolution is most pronounced, (use 70 to 80 KIAS for training and evaluation).

(b) Confirm the aircraft maneuver area is clear. While maintaining the aircraft in trim, and at the appropriate airspeed/TQ, first execute a 45° right bank, followed by a left turn to establish a 45° left bank. Note any change in the 2/revolution vibration level. An increase or decrease in vibration will indicate the presence of a correctable condition. Correctable vibrations are determined as either acceptable or unacceptable depending on the severity. If the 2/revolution remains constant during the maneuvers, it is inherent, and therefore considered uncorrectable. If an intermittent 1/revolution is encountered, it is an indication of a product balance problem.

(4) Record the results of checks as appropriate.

Note. These procedures should be used to determine whether aviation vibration analyzer (AVA) equipment should be installed for further vibration analysis or rotor smoothing, or if other maintenance action is required.

NIGHT OR NIGHT VISION DEVICE CONSIDERATIONS:

1. Apply appropriate common considerations.

2. The RCM or noncrewmember must be prepared to increase their airspace surveillance requirements as the MP may be focused on flight control displacements and system instruments during the maneuver.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted in the aircraft.

2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4272

Perform Communications Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards:

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed as follows:

      (1) Verify that all radios are functioning properly on at least two frequencies. Confirm pilot press to talk switches as well as floor switches. Check all installed secure radio equipment for proper operation. Confirm proper operation of the transponder with the local ATC facility.

      (2) Tune and identify a NDB station and ensure that the automatic direction finder (ADF) needle points to the station. Fly to the station and verify station passage, if time permits execute an NDB approach.

      (3) Tune the VOR radio beacon and verify that the needle points to the station. Adjust the Omni-bearing selector, track to the station and verify station passage. If time permits execute a VOR or ILS approach.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft or academically.

REFERENCES: Appropriate common references.

TASK 4276

Perform Special /Detailed Procedures

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with equipment installed and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards.

Note. Perform special/detailed procedures IAW TM 1-1520-228-MTF/TH-67 MTF as part of general MTF.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. Check any equipment installed on the aircraft for which special detailed procedures are contained in section IV of the MTF. Use additional reference publications as required. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed. If these checks are performed during an MP or ME evaluation, the evaluated crewmember should demonstrate knowledge of the system, published operational checks, and knowledge of published charts, graphs, and work sheets.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: **APPLY APPROPRIATE COMMON CONSIDERATIONS.**

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft or academically.

REFERENCES: Appropriate common references.

TASK 4280

PERFORM BEFORE-LANDING CHECK

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with the before-landing check performed and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards:

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed.

NIGHT OR NIGHT VISSION GOGGLES CONSIDERATIONS:

1. Apply appropriate common considerations.

2. Altitude, apparent ground speed, and rate of closure are difficult to estimate at night. The rate of descent should be slightly less than during the day to avoid abrupt attitude changes at low altitudes. After establishing the descent, reduce airspeed to approximately 40 to 45 knots until apparent ground speed and rate of closure appear to be increasing. Before descending below obstacles, determine the need for artificial lighting.

SNOW/SAND/DUST CONSIDERATIONS:

1. Apply appropriate common considerations.

2. The rate of descent will be determined by the rate in which the snow/sand/dust is blown from the intended landing point. During the descent, remain above the snow/sand/dust cloud until it dissipates and the touchdown point can be seen. Be prepared to execute a go-around. Establish and discuss the environmental effects at the termination point.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training may be conducted in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4282

Perform After-Landing Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with the after-landing check performed and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

TASK 4284

Perform Engine Shutdown Check

CONDITIONS: In an OH-58A/C or in a TH-67 helicopter with the after-landing check performed and given the aircraft MTF manual/CL.

STANDARDS: Appropriate common standards.

DESCRIPTION:

1. Crew actions.

   a. The MP will ensure the checks are conducted IAW the appropriate aircraft MTF manual/CL. The MP may direct the RCM or non-crewmember to perform or assist in the required checks, but will verify that all checks have been completed. The exact procedure varies between the OH-58 and the TH-67 helicopter, as well as additional checks to be accomplished. The RCM or non-crewmember should assist the MP as directed and will ensure all warnings, cautions, and notes are reviewed and acknowledged.

   b. The MP will determine the checks necessary for the TF (general/limited), and will brief the RCM or non-crewmember on what checks are necessary. The MP will stress flight safety considerations or procedures during the briefing. The MP will direct the RCM or non-crewmember to remain focused outside during the procedures, to include clearing the aircraft and maintain airspace surveillance and/or obstacle, (vehicles, equipment and personnel), avoidance as appropriate, and monitor the aircraft flight controls.

2. Procedures.

   a. Perform the checks IAW the appropriate aircraft MTF manual/CL. Conduct a briefing to delineate the duties the MP, RCM or non-crewmember are required to perform. The briefing will emphasize safety in flight operations. If this check is detailed with numerous steps to accomplish, the MP, RCM or non-crewmember performing the check will keep the other crewmember informed of the actions taken. Record data, as required, for the checks to be performed and verifying the instruments correlate with other supporting/specific instrument indications/readings as dictated by the appropriate aircraft MTF manual/CL.

   b. The MP may dictate the recording be accomplished by the RCM or non-crewmember. At least one crewmember will focus attention outside the aircraft during this check to ensure obstacles and other aircraft are avoided during the maneuver. Once tasks and procedures are completed, the MP, RCM or non-crewmember will announce that the task has been completed.

NIGHT OR NIGHT VISION GOGGLES CONSIDERATIONS: Apply appropriate common considerations.

SNOW/SAND/DUST CONSIDERATIONS: Apply appropriate common considerations.

TRAINING AND EVALUATION REQUIREMENTS:

1. Training will be conducted academically or in the aircraft.
2. Evaluation will be conducted in the aircraft.

REFERENCES: Appropriate common references.

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Chapter 6

Aircrew Coordination

This chapter describes the background of aircrew coordination development. It also describes the aircrew coordination principles and objectives, as found in the Army Aircrew Coordination Training-Enhancement Program.

Note. Digitization of the crew compartments has expanded and redefined the lines of responsibility for each crewmember. The enhanced ability for either pilot to perform most aircraft/system functions from his or her crew station breaks down the standard delineation of duties and has added capabilities, and potential distractions, in training and in combat. This could mean that during an unforeseen event, one pilot may attempt to resolve the situation rather than seeking assistance from or even communicating that action with the other crewmember. It is essential for the PC to brief specific duties prior to stepping into the aircraft. Effective sharing of tasks relies on good crew coordination and information management.

6-1. Aircrew Coordination Background and Planning Strategy. An analysis of U.S. Army aviation accidents revealed that a significant percentage of aircraft accidents resulted from one or more aircrew coordination errors committed during and even before the flight mission. Often, an accident was the result of a sequence of undetected crew errors that combined to produce a catastrophic result. Additional research showed that even when crews actually avoided potential accidents, these same errors could result in degraded performance that jeopardized mission success. A systematic analysis of these error patterns identified specific areas where crew-level training could reduce the occurrence of such faults and break the chain of errors leading to accidents and poor mission performance.

a. Aircrew coordination patterns begin with the accomplishment of crew-level pre-mission planning, rehearsal, and after action reviews. Pre-mission planning includes all preparatory tasks associated with accomplishing the mission. This would include assigning crewmember responsibilities and conducting all required briefings and brief-backs. Pre-mission rehearsal involves the crew collectively visualizing and discussing expected and potential unexpected events for the entire mission. Through this process, all crewmembers discuss and think through contingencies and actions for difficult segments, equipment limitations and failures, or unusual events associated with the mission, and develop strategies to cope with possible contingencies (METT-TC).

b. Each crewmember must actively participate in the mission planning process to ensure a common understanding of mission intent and operational sequence. The PC prioritizes planning activities so that critical items are addressed within the available planning time. Crewmembers must then mentally rehearse the entire mission by visualizing and discussing potential problems, contingencies, and assigned responsibilities. The PC ensures that crewmembers take advantage of periods of low workload to review or rehearse upcoming flight segments. Crewmembers should continuously review remaining flight segments to identify required adjustments, making certain their planning is consistently ahead of critical lead times.

c. After a mission or mission segment, the crew should debrief, review, and critique major decisions, their actions, and task performance. This should include identifying options and factors that were omitted from earlier discussion and outline ways to improve crew performance in future missions. Remember, this discussion and critique of crew decisions and actions must remain professional. "Finger pointing" is not the intent and shall be avoided; the emphasis should remain on education with the singular purpose of improving crew and mission performance.

6-2. Aircrew Coordination Principles. Broadly defined, aircrew coordination is the cooperative interaction between crewmembers necessary for the safe, efficient, and effective performance of flight tasks. The essential principles and qualities of aircrew coordination are described in Figure 6-1.

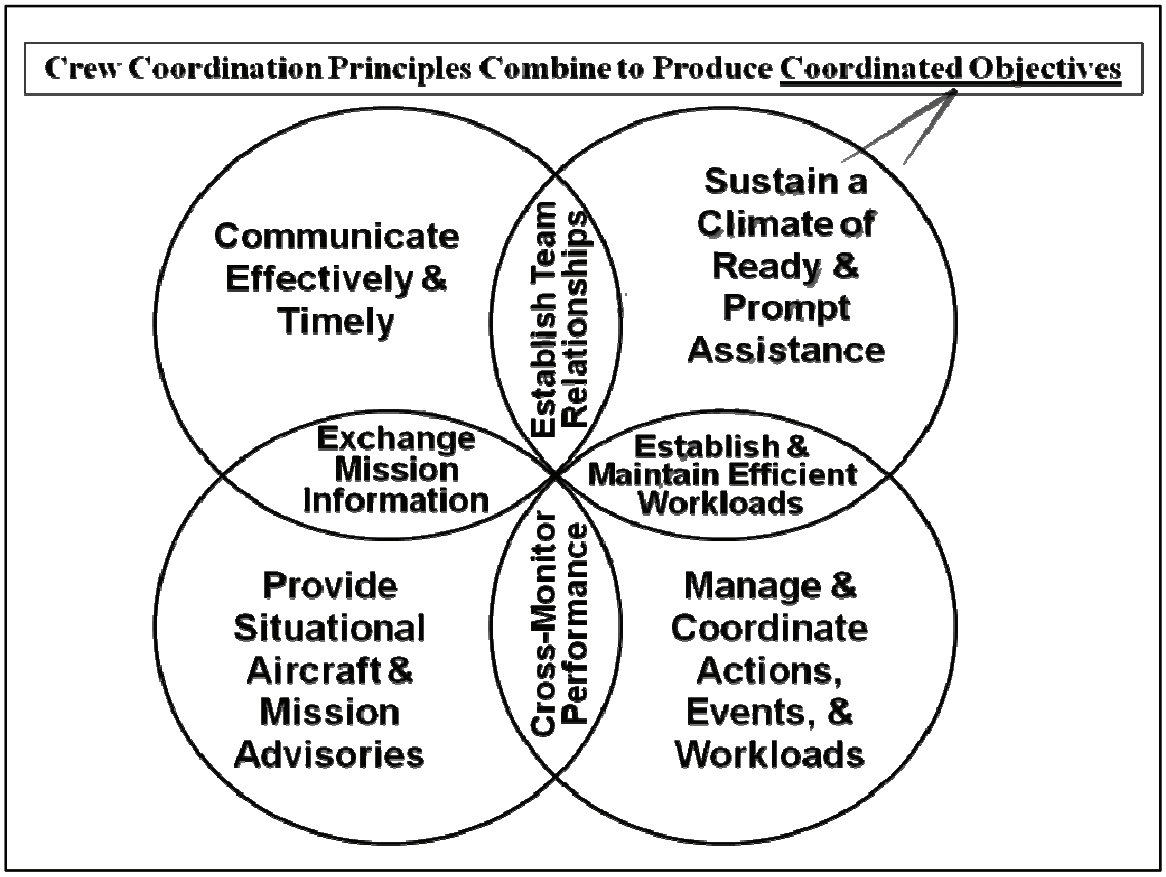

Figure 6-1. Aircrew coordination principles

a. Communicate Effectively and Timely. Good team relationships begin with effective communication among crewmembers. Communication is effective when the sender directs, announces, requests, or offers information; the receiver acknowledges the information; and the sender confirms the receipt of information, based on the receiver's acknowledgment or action. This enables the efficient flow and exchange of important mission information that keeps a crew on top of any situation that arises.

(1) Announce and Acknowledge Decisions and Actions. To ensure effective and well-coordinated actions in the aircraft, all crewmembers must be kept informed and made aware of decisions, expected movements of crew and aircraft, and the unexpected individual actions of others. Each crewmember will announce any actions that may affect the actions of other crewmembers. In turn, COMMs in the aircraft must include supportive feedback that clearly indicates that crewmembers acknowledge and correctly understand announcements, decisions, or directives of other crewmembers.

(2) Ensure that statements and directives are clear, timely, relevant, complete, and verified. These are qualities that must describe the kind of communication that is effective. Considering the fleeting moments of time in a busy aviation environment, only one opportunity may exist to convey critical and supporting information before tragedy strikes. That information must be clearly understood, not confusing, and said at the earliest opportunity possible. It must be applicable to the events at hand to support the needs and security of the mission. The information must include all elements needed to make the best decision based on its urgency; and the communication must come with ability of proven confirmation and without redundancy. It must also include the crew's use of standard terminology and feedback techniques that accurately validate information transfer. Emphasis is on the quality of

statements associated with navigation, obstacle clearance, instrument readouts, and emergencies. Specific goals include—

(a) Crewmembers consistently make the required callouts. Their statements and directives are always timely. Their response to unexpected events is made in a composed, professional manner.

(b) Crewmembers actively seek feedback when they do not receive acknowledgment from another crewmember. They always acknowledge the understanding of intent and request clarification when necessary.

(c) Be explicit. Crewmembers should use clear, concise terms, standard terminology, and phrases that accurately convey critical information. They must avoid using terms that have multiple meanings, such as "right," "back up," or "I have it." Crewmembers must also avoid using indefinite modifiers such as, "Do you see that tree?" or "You are coming in a little fast."

b. Sustain a Climate of Ready and Prompt Assistance. The requirement to maintain a professional atmosphere by all members of the team begins with the team leadership of the PC. However, all crewmembers must equally respect the value of other crewmember's expertise and judgment regardless of rank, duty, or seniority. Every member has a responsibility to maintain situational awareness for mission requirements, flight regulations, operating procedures, and safety. Each crewmember must be willing to practice advocacy and assertiveness should the situation demand a different course of action, as time permits. It is critical to maintain this crew climate that enables opportunity to apply appropriate decision-making techniques for defining the best course of action when problems arise. Courses of action may demand that assistance be directed to other crewmembers or could be voluntary assistance that is offered in a timely manner, depending on time constraints and information available. All crewmembers must remain approachable, especially in critical phases of flight when reaction time is at a premium.

Note. The two-challenge rule allows one crewmember to assume the duties of another crewmember who fails to respond to two consecutive challenges automatically. For example, the P* becomes fixated, confused, task overloaded, or otherwise allows the aircraft to enter an unsafe position or attitude. The P first asks the P* if he is aware of the aircraft position or attitude. If the P* does not acknowledge this challenge, the P issues a second challenge. If the P* fails to acknowledge the second challenge, the P assumes control of the aircraft.

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c. Effectively Manage, Coordinate, and Prioritize Planned Actions, Unexpected Events, and Workload Distribution. The crew performing as a team should avoid distractions from essential activities while distributing and managing the workloads equally. Both the technical and managerial aspects of coping with normal and unusual situations are important. Proper sequencing and timing guarantees that the actions of one crewmember support and mesh with the actions of the other crewmembers. Responsible effort must be used to ensure that actions and directives are clear, timely, relevant, complete, verified, and coordinated with minimal direction from the PC.

(1) Direct Assistance. A crewmember will direct or request assistance when he cannot maintain aircraft control, position, or clearance. A crewmember will also direct assistance when being overloaded with tasks or unable to properly operate or troubleshoot aircraft systems without help from the other crewmembers. The PC ensures that all crew duties and mission responsibilities are clearly assigned and efficiently distributed to prevent the overloading of any crewmember, especially during critical phases of flight. Crewmembers should also watch for workload buildup on others and react quickly to adjust the distribution of task responsibilities.

(2) Prioritize Actions and Equitably Distribute Workload. Crewmembers are always able to identify and prioritize competing mission tasks. They never ignore flight safety and other high-priority tasks. They appropriately delay low-priority tasks until those tasks do not compete with tasks that are more critical. Crewmembers consistently avoid nonessential distractions so that these distractions do not affect task performance (sterile cockpit) or ability to help another crewmember. Crew actions should reflect extensive review of procedures in prior training and pre-mission planning and rehearsal.

d. Provide Situational Aircraft Control, Obstacle Avoidance, and Mission Advisories. Although the P* is responsible for aircraft control, the other crewmembers may need to provide aircraft control information regarding aircraft position (airspeed, altitude), orientation, obstacle avoidance, equipment and personnel

status, environmental and battlefield conditions, and changes to mission objectives or evolving situations of the mission (situational awareness). Crewmembers must anticipate and offer supporting information and actions to the decision-maker, which is usually the PC or may be the AMC in a mission related situation. Specific goals include the following:

(1) Situational Awareness. Crewmembers must anticipate the need to provide information or warnings to the PC or P* during critical phases of the flight or mission. The PC must encourage crewmembers to exercise the freedom to raise issues or offer information about safety or mission related matters. In turn, the crewmembers will provide the required information and warnings in a timely and professional manner. None of this could be accomplished without cross-monitoring performance and crew tasks.

(2) Mission Changes and Updates. Crewmembers should routinely update each other while highlighting and acknowledging mission changes. They must take personal responsibility for scanning the entire flight environment, considering their assigned workload and areas of scanning. Each crewmember needs to appropriately adjust individual workload and task priorities with minimal verbal direction from the PC when responding to emergencies and unplanned changes of the mission.

(3) Offer Assistance. A crewmember will provide assistance, information, or feedback in response to another crewmember. A crewmember will also offer assistance when he detects errors or sees that another crewmember needs help. In the case where safety or mission performance is at risk, immediate challenge and control measures must be assertively exercised. A crewmember should quickly and professionally inform and assist the other crewmember committing the error. When required, they must effectively implement the two-challenge rule with minimal compromise to flight safety. This means that you must continually cross-monitor other crewmember's actions and remain capable of detecting each other's errors. Such redundancy is particularly important when crews are tired or overly focused on critical task elements and thus more prone to make errors. Crewmembers must discuss conditions and situations that can compromise situational awareness. These include, but are not limited to, stress, boredom, fatigue, and anger.

6-3. Aircrew Coordination Objectives. Aircrew coordination principles and objectives originate from and are fundamentally supported by a set of individual, professional skills. Each crewmember is responsible for attaining the leadership skills of effective communication, resource management, decision-making, situational awareness, team building, and conflict resolution. When crewmembers are actively using these skills and practicing aircrew coordination principles, results can be seen and measured to determine if the objectives of the aircrew coordination program are being met. The goals of the program have been defined by four aircrew coordination objectives. The four objectives are—

a. Establish and maintain team relationships. Establish a positive working relationship that allows the crew to communicate openly, freely, and effectively in order to operate in a concerted manner where a climate of professional assistance is easily found and promptly provided.

b. Establish and maintain efficient workloads. Manage and coordinate priorities and execute the mission workload in an effective and efficient manner with the redistribution of task responsibilities as the mission situation changes. Flight duty responsibilities are performed in a timely manner where mission needs are always anticipated.

c. Exchange mission information. Establish all levels of crew and mission COMMs using effective patterns and techniques that allow for the flow of essential data and mission advisories among all crewmembers in a timely and accurate manner.

d. Cross-monitor performance. Cross-monitor each other's actions and decisions to ensure workloads and crew actions are performed in a coordinated manner and to standard. Cross-monitoring crewmember performance keeps a crew ready to provide aircraft and mission advisories to each other and helps to reduce the likelihood of errors affecting mission performance and safety.

6-4. Standard Crew Terminology. To enhance communication and aircrew coordination, crews should use words or phrases that are understood by all participants. They must use clear, concise terms that can be easily understood and complied with in an environment full of distractions. Multiple terms with the same meaning should be avoided. DOD FLIP contains standard terminology for radio COMMs. Operator's manuals contain

standard terminology for items of equipment. Table 6-1, page 6-5, is a list of other standard words and phrases that crewmembers may use.

Table 6-1. Examples of standard words and phrases

Standard word or phrase	***Meaning of standard word or phrase***
Abort	Terminate a preplanned aircraft maneuver.
Affirmative	Yes.
Bandit	An identified enemy aircraft.
Bingo	Fuel state needed for recovery.
Blind	No visual contact of friendly aircraft/ground position. Opposite of VISUAL.
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 the other crewmember.
target/object Captured	Specific surface target/object has been acquired and is being tracked with an on-board sensor.
Cease fire	Command to stop firing but continue to track.
Clear	No obstacles 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,” “slide left,” or “slide 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	1) Establish communication with (followed by the name of the element). 2) Sensor contact at the stated position. 3) Acknowledges sighting of a specified reference point (either visually or via sensor). 4) Individual radar return within a GROUP or ARM.
Controls	Refers to aircraft flight controls.
Deadeye	Laser designator system inoperative.
Drifting	An alert of the unintentional or undirected movement of the aircraft; will be followed by the word “right,” “left,” “backward,” or “forward.”
Egress	Command to make an emergency exit from the aircraft; will be repeated three times in a row.
Execute	Initiate an action.
Expect	Anticipate further instructions or guidance.

Table 6-1. Examples of standard words and phrases (continued)

Standard word or phrase	*Meaning of standard word or phrase*
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.)
Go ahead	Proceed with your message.
Go AJ	Directive to activate anti-jam COMMs.
Go plain/red	Directive to discontinue secure operations.
Go secure/green	Directive to activate secure COMMs.
Hold	Command to maintain present position.
HVR	Horizontal movement of aircraft perpendicular to its heading; will be followed by the word “left” or “right.”
Inside	Primary focus of attention is inside the cockpit for longer than 5 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.
Laser On	Start/acknowledge laser designation.
Lasing	The speaker is firing the laser.
Maintain	Command to continue or keep the same.
Mask/unmask	To conceal aircraft by using available terrain features and to position the aircraft above terrain features.
Mickey	A HaveQuick time-synchronized signal.
Monitor	Command to maintain constant watch or observation.
Move back	Command to HVR back, followed by distance in feet.
Move forward	Command to HVR forward, followed by distance in feet.
Negative	Incorrect or permission not granted.
Negative contact	Unable to establish communication with (followed by name of element).
Negative laser	Aircraft has not acquired laser energy.
No joy	Aircrew does not have positive visual contact with the target/bandit/traffic/obstruction/landmark. Opposite of TALLY.
Now	Indicates that an immediate action is required.
Offset (direction)	Maneuver in a specified direction with reference to a target.
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 crewmember to place a frequency in a specific radio.
Release	Command for the planned or expected release of an external load.
Remington	No ordnance remaining except gun or self-protect ammunition.
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."

Table 6-1. Examples of standard words and phrases (continued)

Standard word or phrase	*Meaning of standard word or phrase*
Slow down	Command to reduce ground speed.
Speed up	Command to increase ground speed.
Splash	1) (air-to-surface) Weapons impact. 2) (surface-to-surface) Informative call to observer or spotter five seconds prior to estimated time of impact. 3) (air-to-air) Target destroyed.
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.
Strobe	Indicates that the aircraft AN/APR-39 has detected a radar threat; will be followed by a clock direction.
Tally	Sighting of a target, non-friendly aircraft, enemy position, landmark, traffic, or obstruction positively seen or identified; will be followed by a repeat of the word “target,” "traffic," or "obstruction" and the clock position. Opposite of No Joy.
Target	An alert that a ground threat has been spotted.
Traffic	Refers to friendly aircraft that present a potential hazard to the current route of flight; will be followed by an approximate clock position and the distance from your aircraft with a reference to altitude (high or low).
Transfer of controls	Positive three-way transfer of the flight controls between the crewmembers (for example, "I have the controls“, "You have the controls," and "I have the controls").
Turn	Command to deviate from present ground track; will be followed by words "right" or "left," specific heading in degrees, a bearing ("Turn right 30°"), 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").
Visual	Sighting of a friendly aircraft/ground position. Opposite of BLIND.
Weapons hot/cold/off	Weapon switches are in the ARMED, SAFE, or OFF position.
Wilco	I have received your message, I understand and I will comply.
Winchester	No ordnance remaining.
Zoom In/Out	Increase/decrease the sensor’s focal length. ZOOM IN/OUT is normally followed by “ONE, TWO, THREE or FOUR”: to indicate the number of FOVs to change. (Note: It is recommended only one change in or out at a time be used for the FOV.)

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Appendix A

Aircraft Design Qualification

A-1. For standardization purposes, the OH-58 and TH-67 are designated as being similar aircraft (type/design); however, qualification in one aircraft within the design group does not constitute qualification in the other aircraft within the design group. An aviator qualified in one of the aircraft within the group will require an aircraft qualification to transition from one aircraft to another within the group. For example, an aviator who graduates flight school and is qualified in the TH-67 on their DA Form 759 would require an aircraft qualification IAW this appendix and this ATM in order to become qualified in an OH-58.

A-2. The aviator will receive academic training and demonstrate a working knowledge of the applicable topics in paragraph 3-4b. The aviator must complete a 50-question open book operator's manual/supplement examination IAW the appropriate aircraft. Academic training will be documented on the individuals DA Form 4507-R *(Crew Member Grade Slip*) as it is completed as part of the training.

A-3. The aviator will receive flight training and demonstrate proficiency from either crew station in each base task and in each mode of flight marked with an "**X**" in the "**D**", "**N**" and "**I**" columns in table 2-2, page 2-3. Flight training is proficiency based; however, a minimum of one hour of night and one hour of hooded flight instruction will be conducted in the aircraft.

Note. The only required series qualification emergency flight tasks that must be performed are Task 1072, **Task 1074**, and **Task 1323**.

A-4. For aviators at USAACE, the aircraft system POI provided by the Scout/Attack Academic Section, 110th AB, may be used to complete the required aircraft system academic training.

A-5. Training conducted at the unit level should use the appropriate USAACE OH-58A/C or TH-67 aircraft system POI.

A-6. Aviators required to fly different equipment configurations of the TH-67 (A+, VFR, and IFR) or OH-58 (A,C) series must complete academic familiarization training and a minimum of a 1 hour flight for each model the aviator is required to fly. All training will be documented on the aviator's DA Form 7122 or appropriate training record. For the TH-67 (IFR) instrument version, the required training may be accomplished in the TH-67 (IFR) simulator.

A-7. NVG aircraft qualification is a separate training requirement and will be conducted IAW TC 3-04.11 and TC 3-04.43.

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Appendix B

Aircraft Currency Requirements

B-1. The OH-58A/ C and TH-67 are aircraft with similar operating characteristics and are grouped together for currency purposes.

B-2. Once qualified IAW appendix A, currency in the OH-58A/C or the TH-67 aircraft will satisfy the currency requirement for all aircraft within the series group.

B-3. An APART evaluation in one of the aircraft will satisfy all APART requirements for the aircraft within the series group. This includes all day, night, NVG, MTP, ME, and instrument evaluations.

B-4. Aviators flying more than one aircraft within the series group require only one DA Form 7120-R (Commander's Task List) in the IATF.

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Appendix C

Security and Support Aircraft Mission Equipment Package Training

C-1. Additional System Training. During system training, RL status will not be affected. Additional systems training will be conducted IAW the appropriate TSP, ATTS approved POI, new equipment training (NET), Interim Statement of Airworthiness Qualification, or AWR, as applicable. If a TSP is applicable, it may be obtained by writing to Commander, U.S. Army Aviation Center of Excellence, ATTN: ATZQ-TDT-F, Fort Rucker, AL 36362-5000. A copy of an applicable ATTS approved POI may be obtained by writing Chief NGB AVS. As new equipment is fielded on NGB assigned aircraft, the level of training required will be determined by the Chief NGB AVS with coordination with Commander, U.S. Army Aviation Center of Excellence, and Fort Rucker, AL. A qualified SP, IP or SI will conduct all training and evaluations. Document additional task training on Part V, remarks section of DA Form 759 (Individual Flight Record and Flight Certificate-Army) closeout and DA Form 7122-R (Crew Member Training Record). The use of two or more additional systems operated simultaneously during flight will require additional flight training. This training will be conducted as part of unit mission training in all modes of flight the additional systems will be used. There are no minimum flight hour requirements. The training is proficiency based determined by the crewmember's ability to satisfactorily accomplish the designated tasks. The hours listed in the tables are recommended. Training may be completed by a qualified UT, SP, IP, or SI evaluations of the unit developed mission training will be completed by a qualified SP, IP, or SI. Documentation of unit mission training will be on DA Form 7122-R.

C-2. Initial TIS Training. Initial TIS training will consist of the following training.

a. **Academic training.** The crewmember will receive training and demonstrate a working knowledge of the topics in table C-1.

Table C-1. Initial thermal imaging system, academic training for crewmembers

Initial Thermal Imaging System Academic Instruction Hours	
IR theory and TIS operations	2.0*
TIS familiarization	1.0
TIS pre-flight, system test, and operation	1.0
TIS fault analysis	1.0
TIS airworthiness, limitations, handling qualities	1.0
Emergency procedures considerations	1.0*
TIS performance planning and WT and balance	1.0*
Total Hours	***8.0***

* Indicates a supplemental consideration for this task when performed in a MEP helicopter.

b. **Ground training (RCM).** Prior to flight training, the RCM will receive 1 hour of static ground training in the aircraft performing Task 2061.

c. **Flight training (RCM).** The RCM should receive 5 hours of flight training in the aircraft to include 2 hours of night unaided (7 hours if designated to fly NVG on the RCM's DA Form 7120-R. The additional 2 hours will be NVG). At a minimum, RCM will perform the tasks listed in table C-2, page C-2.

***Table C-2. Flight tasks for initial thermal imaging system training**

Task Titles	
1000 Conduct a Crew Mission Briefing	
1010 Prepare a Performance Planning Card	
1005 Perform Pre-flight Inspection	
1007 Perform Engine Start, Run-Up, Hover, and Before Takeoff Checks*	
1016 Perform Hover PWR Check*	
1023 Perform Fuel Management Procedures	
1024 Perform Emergency Procedures for Actual or Simulated Night Vision Goggle Failure*	
1032 Perform Radio Communications Procedures*	
1062 Perform Slope Operations*	
1068 Perform or Describe Emergency Procedure	
1078 Perform Unusual Attitude Recovery*	
1083 Perform or Describe Inadvertent Instrument Meteorological Conditions Procedures	
2061 Operate the Thermal Imaging System	
2530 Conduct Vehicle/Vessel Surveillance	
2540 Perform Fixed Target Observation	
Ground Instruction Hours (Task 2061)	1.0
Flight Instruction	
D/N training	5.0 (2.0 night unaided)
NVG (if applicable)	2.0
Total FLIGHT hours	***7.0***

* Indicates a supplemental consideration for this task when performed in a MEP helicopter.

d. **SP/IP qualification.** SPs/IPs will be trained and evaluated on the academics and flight training listed above.

C-3. INITIAL HPIS TRAINING. This TSP outlines procedures that units will use for initial HPIS qualification. HPIS will consist of the following training.

a. **Academic training.** The crewmember will receive training and demonstrate a working knowledge of the topics in table C-3.

Table C-3. High-powered illumination system academic training for crewmembers

High-Powered Illumination System Academic Instruction Hours	
HPIS operator's familiarization operations	1.5
HPIS pre-flight, system test, and operation	1.0
HPIS fault analysis	0.5
TIS airworthiness, limitations, handling qualities, emergency procedures considerations, performance planning, and weight and balance	1.0
Total Hours	***4.0***

b. **Ground training (RCM).** Prior to flight training, the RCM will receive 1 hour of static ground training in the aircraft performing Task 2600.

c. **Flight training (RCM).** The RCM should receive 2 hours of night unaided flight training in the aircraft (4 hours if designated to fly NVG on the RCM's DA Form 7120-R. The 2 additional hours will be NVG). At a minimum, RCM will perform the tasks listed in table C-4.

***Table C-4. Flight tasks for initial thermal imaging system training**

Task Titles	
1000 Conduct a Crew Mission Briefing	
1010 Prepare a Performance Planning Card	
1005 Perform Pre-Flight Inspection	
1007 Perform Engine Start, Run-Up, Hover, and Before Takeoff Checks*	
1016 Perform Hover PWR Check*	
1024 Perform Emergency Procedures for Actual or Simulated Night Vision Goggle Failure*	
1032 Perform Radio Communications Procedures*	
1062 Perform Slope Operations*	
1068 Perform or Describe Emergency Procedure	
1078 Perform Unusual Attitude Recovery*	
1083 Perform or Describe Inadvertent Instrument Meteorological Conditions Procedures	
2600 Operate the High Powered Illumination System	
Ground Instruction Hours (Task 2600)	1.0
Flight Instruction	
Night-aided training	2.0
NVG (if applicable)	2.0
Total FLIGHT hours	***4.0***

* Indicates a supplemental consideration for this task when performed in a MEP helicopter.

d. **SP/IP qualification.** SP/IPs will be trained and evaluated on the crewmember academics and flight training listed above.

C-4. Wulfsberg C-5000 training. This TSP outlines procedures that units will use for Wulfsberg C-5000 training. This training provides the crewmember with the knowledge, skills, and techniques required for pre-flight, in-flight system operations, emergency procedures, and basic employment considerations associated with the C-5000. Wulfsberg C-5000 training will consist of the following.

a. **Academic training.** The crewmember will receive training and demonstrate a working knowledge of the topics in table C-5.

Table C-5. Wulfsberg C-5000 communications academic training for crewmembers

Wulfsberg C-5000 Communications Academic Instruction Hours	
Basic operation and components	1.0
Programming	1.0
Enhance modes of operation	1.0
Total Hours	***3.0***

b. **Ground training (RCM).** Prior to flight use, the RCM will receive 2 hours of static ground training in the aircraft or in classroom using active training aids. RCM will demonstrate proficiency based on Task 1032 and the Wulfsberg operator's manual.

c. **Flight training (RCM).** No flight training requirements.

d. **SP/IP qualification.** SP/IPs will be trained and evaluated on the training listed above.

C-5. NEW AND/OR UPGRADED TIS TRAINING. This TSP outlines procedures that units will use for fielding of new and/or upgraded TIS system qualification. The new and/or upgraded TIS training will consist of the following:

a. **Academic training.** The crewmember will receive training and demonstrate a working knowledge of the topics in table C-6.

Table C-6. New and/or upgraded thermal imaging system academic training for crewmembers

New and /or upgraded Thermal Imaging System Academic Instruction Hours	
TIS SYSTEM familiarization	1.0
TIS SYSTEM pre-flight, system test, and operation	1.0
TIS SYSTEM fault analysis	1.0
TIS SYSTEM airworthiness, limitations, handling qualities	0.5
TIS SYSTEM performance planning and weight and balance	0.5
TOTAL HOURS	**4.0**

(Academics will be conducted IAW NET fielding guide or manufactures' developed training program. Appropriate operator's manual for the system training being conducted will be inserted.)

b. **Ground training (RCM).** Prior to flight training, the RCM will receive 1 hour of static ground training in the aircraft performing Task 2061.

c. **Flight training (RCM).** The RCM should receive 2 hours of flight training in the aircraft to include 1 hour of night unaided (4 hours if designated to fly NVG on the RCM's DA Form 7120-R. The additional 2 hours will be NVG). At a minimum, RCM will perform the tasks listed in table C-7.

d. **SP/IP qualification.** Previously trained and evaluated TIS IPs/SPs will be considered proficient to perform these duties after completion of training listed in table C-6 and C-7. SPs/IPs not previously trained, will be trained and evaluated on the subjects listed in table C-6.

***Table C-7. Flight tasks for initial thermal imaging system training**

TaskTitles	
1000 Conduct a Crew Mission Briefing	
1010 Prepare a Performance Planning Card	
1005 Perform Pre-Flight Inspection	
1007 Perform Engine Start, Run-Up, Hover, and Before Takeoff Checks*	
1016 Perform Hover PWR Check*	
1023 Perform Fuel Management Procedures	
1024 Perform Emergency Procedures for Actual or Simulated Night Vision Goggle Failure*	
1032 Perform Radio Communications Procedures*	
1062 Perform Slope Operations*	
1068 Perform or Describe Emergency Procedure	
1078 Perform Unusual Attitude Recovery*	
1083 Perform or Describe Inadvertent Instrument Meteorological Conditions Procedures	
2061 Operate the Thermal Imaging System	
2530 Conduct Vehicle/Vessel Surveillance	
2540 Perform Fixed Target Observation	
Ground Instruction Hours (Task 2061)	1.0

***Table C-7. Flight tasks for initial thermal imaging system training**

Flight Instruction	
D/N Training	2.0 (1.0 night unaided)
NVG (if applicable)	1.0
Total FLIGHT hours	***3.0***

* Indicates a supplemental consideration for this task when performed in an MEP or CD helicopter.

C-6. PERFORM ELECTRONICALLY AIDED NAVIGATION TRAINING. This TSP outlines procedures that units will use for electronically aided navigation (moving map) training. This training provides the crewmember with the knowledge, skills, and techniques required for pre-flight, in-flight system operations, emergency procedures, and basic employment considerations associated with the electronically aided navigation system. Training will consist of the following.

a. **Academic training.** The crewmember will receive training and demonstrate a working knowledge of the topics in table C-8.

Table C-8. Electronically aided navigation academic training for crewmembers

Electronically Aided Navigation System Academic Instruction Hours	
Basic operation and components	1.0
System programming and adjustments	1.0
Enhance modes of operation	1.0
Total Hours	***3.0***

(Academics will be conducted IAW student outline lesson from ATTS if available or NET/manufacture training guidelines. Appropriate operator's manual for the system training is being conducted will be inserted.)

b. **Ground training (RCM).** Prior to flight use, the RCM will receive 1 hour of static ground training in the aircraft or in classroom using active training aids. RCM will demonstrate proficiency based on Task 2250.

c. **Flight training (RCM).** No flight training requirements.

d. **SP/IP qualification.** Previously trained IP/SPs will be considered trained and proficient to perform these duties after completion of training listed in table C-8. SP/IPs who was not previously trained will be trained and evaluated on the subjects listed in table C-8.

b. **Ground training (RCM).** Prior to flight use, the RCM will receive 1 hour of static ground training in the aircraft or in classroom using active training aids. RCM will demonstrate proficiency based on Task 2250.

c. **Flight training (RCM).** No flight training requirements.

d. **SP/IP qualification.** Previously trained IP/SPs will be considered trained and proficient to perform these duties after completion of training listed in table C-8. SP/IPs who was not previously trained will be trained and evaluated on the training listed above.

Appendix D

Special Mission Tasks for Security and Support Battalion Aircrews

The following tasks are provided for the purpose of standardizing special mission tasks among companies, units, detachments, and sections that are not located in the same state or geographical region. The selection and use of these tasks are determined by the local commander/OIC as required to the support the units METL. Any modification/changes of these tasks or development of additional task will be forwarded to NGB-AVS Standardization.

MODIFICATION OF BASE, MISSION, AND ADDITIONAL TASKS FOR SECURITY AND SUPPORT BATTALION AIRCREWS

D-1. The following considerations modify the task, conditions and standards for base, mission and additional tasks as described in Chapter 4. These modifications support the special mission equipment installed on Security and Support OH-58A/C aircraft.

TASK 1024: PERFORM BEFORE STARTING ENGINE THROUGH BEFORE LEAVING HELICOPTER CHECKS

D-2. PWR up the TIS IAW the TIS operator's manual CL.

TASK 1028: PERFORM HOVER PWR CHECK

D-3. Perform HVR PWR check at 2-foot stationary HVR while in the vicinity of the intended takeoff point and in the direction of takeoff. This will compensate for the approximately 27-inch high skid gear on special mission equipped aircraft.

TASK 1040: PERFORM A VISUAL METEOROLIGICAL CONDITIONS (VMC) TAKEOFF

D-4. The TIS operator will not conduct TIS operations during NVG takeoffs. This will ensure that crew coordination and scanning can be properly conducted by both crewmembers.

TASK 1058: PERFORM A VISUAL METEOROLIGICAL CONDITIONS (VMC) APPROACH

D-5. The TIS may be used to assist in performing a landing area reconnaissance prior to the actual landing; however, the TIS operator will not conduct TIS operations during the NVG approach to ensure that crew coordination and scanning can be properly conducted by both crewmembers.

TASK 1062: PERFORM SLOPE OPERATIONS

CAUTION

Ensure surface area under aircraft does not have obstructions that extend upward since clearance from the TIS unit to the ground is approximately 12”(*). Additionally, ensure surface area does not have loose gravel or other objects that can be blown about and damage the TIS.

(*) With the U7500/U8500 TIS installed. If FSI 2000 TIS is installed, ground clearance lessens to approximately 7 inches. If the HPIS is installed, the approximate ground clearance may be as little as 4 inches.

TASK 1182: PERFORM UNUSUAL ATTITUDE RECOVERY

D-6. The TIS operator must discontinue TIS operations immediately when the P* announces “Unusual Attitude” and prepare to take the controls.

TASK 1424: RESPOND TO NIGHT VISION GOGGLE (NVG) FAILURE

D-7. The TIS operator must discontinue TIS operation immediately when the P* announces “Goggle failure” and prepare to take the aircraft controls.

TASK 1040: PERFORM A VISUAL METEOROLIGICAL CONDITIONS (VMC) TAKEOFF

D-8. The TIS operator will not conduct TIS operations during NVG takeoffs. This will ensure that crew coordination and scanning can be properly conducted by both crewmembers.

TASK 1058: PERFORM A VISUAL METEOROLIGICAL CONDITIONS (VMC) APPROACH

D-9. The TIS may be used to assist in performing a landing area reconnaissance prior to the actual landing; however, the TIS operator will not conduct TIS operations during the NVG approach to ensure that crew coordination and scanning can be properly conducted by both crewmembers.

Glossary

ACP	active control point
ADF	automatic direction finder
AGL	above ground level
AHO	above highest obstacle
AIM	aeronautical information manual
AKO	Army knowledge online
ALSE	aviation life support equipment
ALT	altitude
AMC	air mission commander
AMCOM	aviation and missile command
ANVIS	aviator's night vision imaging system
APART	annual proficiency and readiness test
AR	Army regulation
ARNG	Army National Guard
ASR	airport surveillance radar
ATC	air traffic control
ATIS	automated terminal information service
ATM	aircrew training manual
ATP	aircrew training program
AVAIL	available
AWR	airworthiness release
C	Celsius
CBI	computer based instruction
CBRN	chemical, biological, radiological, nuclear
CDI	course deviation indicator
CG	center of gravity
CHUM	chart updating manual
CL	checklist
COMM	communications
CNGB	Chief National Guard Bureau
CONT	continous
CPU	control processing unit
CSAR	combat search and rescue
CTL	commander's task list
D	day
DA	Department of the Army
DA Pam	Department of the Army pamphlet
DD	Department of Defense
DH	decision height

DME	distance measuring equipment
DMU	display monitor unit
DOD FLIP	Department of Defense flight information publication
ELA	enroute low altitude
END	endurance
EPC	engine performance check
ETA	estimated time of arrival
ETE	estimated time en route
ETL	effective transitional lift
FAA	Federal Aviation Administration
FAC	flight activity category
FAF	final approach fix
FAT	free air temperature
FIH	flight information handbook
FLIR	forward looking infrared
FM	field manual
FOV	field of view
FPM	feet per minute
FS	fuselage station
gals	gallons
GCA	ground controlled approach
GWT	gross weight
HA	holding area
HAL	height above landing
HPIS	high powered illumination system
HQDA	Headquarters, Department of the Army
HVR	hover
HYD SYS	hydraulic system
IAF	initial approach fix
IAP	initial approach point
IAS	indicated airspeed
IATF	individual aircrew training folder
IAW	In accordance with
ICS	intercommunication system
IE	instrument flight examiner
IF	intermediate approach fix
IFF	identification, friend or foe
IFRF	instrument flight records folder
IFR	instrument flight rules
IGE	in-ground effect
ILS	instrument landing system

IMC	instrument meteorological conditions
IIMC	inadvertent instrument meteorological conditions
IP	instructor pilot
IPB	intelligence preparation of the battlefield
KIAS	knots indicated airspeed
lbs	pounds
LEA	law enforcement agency
LZ	landing zone
MAHF	missed approach holding fix
MAP	missed approach point
MAX	maximum
MDA	minimum decision altitude
ME	maintenance test flight evaluator
MEF	maximum elevation figures
METL	mission essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, civil considerations
MP	maintenance test pilot
MTF	maintenance test flight
NAVAID	navigational aid
N	night
N_1	gas producer (speed)
N_2	PWR turbine (speed)
NAVAIDS	navigational aids
NDB	non-directional (radio) beacon
NET	new equipmen training
NG	National Guard
NGR	National Guard regulation
NM	nautical mile
NOE	nap-of-the-earth
NOTAM	notice to airmen
NVD	night vision device
NVG	night vision goggle
NVS	night vision system
OGE	out-of-ground effect
OH	observer helicopter
P	pilot not on the controls
P*	pilot on the controls
PA	pressure altitude
PC	pilot in command
PFE	proficiency flight evaluation

PI	pilot
POI	program of instruction
PPC	performance planning card
PPS	precise positioning service
PWR	power
PZ	pickup zone
R/C	rate of climb
RCM	rated crewmember
RL	readiness level
RP	rally point
RPM	revolutions per minute
SM	statute miles
SOP	standing operating procedure
SP	standardization instructor pilot
STANAG	standardization agreement
TACAN	tactical air navigation
TAS	true airspeed
TC	training circular
TH	training helicopter
TIS	thermal imaging system
TM	technical manual
TQ	torque
TOT	turbine outlet temperature/time on target
TRADOC	Training and Doctrine Command
TSP	training support package
USAACE	United States Army Aviation Center of Excellence
U.S.	United States
UT	unit trainer
VFR	visual flight rules
VOR	very high frequency omni-directional range radio beacon
VMC	visual meteorological conditions
WAATS	western Army aviation training site
WPT	waypoint
WT	weight

bingo	A pre-briefed fuel state that allows the aircraft to return to the base of intended landing or an alternate, if required, using preplanned recovery parameters and arriving with normal recovery fuel (AFI 11-2T-6).
joker	A pre-briefed fuel state needed to terminate an event and transition to the next phase of flight (AFI 11-2T-6).
mayday	The distress signal “MAYDAY” is used to indicate that a station is threatened by grave and imminent danger and requests immediate assistance (Federal Communication Commission).
muskeg	Thick deposit of partially decayed vegetable matter of wet boreal regions.
pan pan	The urgency signal “PAN PAN” is used when the safety of the ship or person is in jeopardy (Federal Communication Commission).

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By Order of the Secretary of the Army

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