*BY ORDER OF THE*
*SECRETARY OF THE AIR FORCE*

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***Flying Operations***

# *UH-1N HELICOPTER OPERATIONS PROCEDURES*

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This manual implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*; AFPD 11-4, *Aviation Service*; and expands upon Air Force Instruction (AFI) 11-202V3, *General Flight Rules*. This is a specialized publication intended for use by Airmen who have graduated from technical training related to this publication. It establishes procedures for the operation of all UH-1N helicopters employed by the United States Air Force (USAF) to accomplish their respective missions. This manual applies to all units and Airmen in the Regular Air Force, Air Force Reserve, and Air National Guard that operate the UH-1N, except Air Force Materiel Command (AFMC) units and members. For the purpose of this manual including intent for tiered waiver authority levels, DRUs (such as Air Force District of Washington (AFDW)) are considered a Major

Command (MAJCOM). Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Instruction 33-322, Records Management and Information Governance Program. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*. Route AF Forms 847 from the field through the appropriate functional chain of command to Air Force Global Strike Command, Training and Operations Branch (AFGSC/A3TO. This publication may be supplemented at any level; all supplements must be routed to the user MAJCOM for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

**(PACAF)** This supplement implements and extends the guidance of Air Force Manual (AFMAN) 11-2UH-1N, Volume 3, *UH-1N Helicopter Operations Procedures*. This supplement describes Pacific Air Force Command procedures for use in addition to the basic AFMAN. Requirements of this supplement apply to all PACAF UH-1N flying units and PACAF UH-1N aircrew personnel. It does not apply to Air National Guard or Air Force Reserve Command units. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFI 33-322, *Records Management and Information Governance Program*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 through the appropriate functional chain of command. This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See DAFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate tier waiver approval authority, utilizing guidance identified in DAFI 33-360.

## *SUMMARY OF CHANGES*

This publication has been substantially revised and must be thoroughly reviewed.

Major changes include; added waiver tiers in accordance with AFI 33-360, hot refueling guidance, and prohibited training maneuvers.

**(PACAF)** Changes include the following: clarification on missions that qualify as direct mission support; removal of paragraph regarding delegation of MEP (Mission Essential Personnel)

approval authority as it is already addressed in AFI (Air Force Instruction) 11-401 PACAF Supplement; references to PACAFI (PACAF Instruction) 13-206 have been removed since it is a rescinded publication; clarification on VFR training/Exercise weather minimums; and clarification of altitude restrictions to comply with AFI 11-202V3 and ICAO *Annex 2: Rules of the Air*.

# Chapter 1

## GENERAL GUIDANCE

**1.1. Roles and Responsibilities.** This manual and Air Force Manual (AFMAN) 11-2UH-1NV3, Checklist 1 (CL-1), UH-1N Crew Briefing Guides/Checklists, are used in conjunction with aircraft flight manuals, Flight Information Publications (FLIP), and referenced USAF publications to describe all UH-1N training, normal, and contingency operations.

1.1.1. AFGSC/A3TO has overall responsibility for administration of this manual and associated checklists.

1.1.2. Throughout this AFMAN references are made to MAJCOM and Numbered Air Force (NAF) levels of responsibilities. Due to the diverse nature of the structure of UH-1N units, all references to a particular MAJCOM or NAF office are intended to mean that office or equivalent. MAJCOM supplements to this AFMAN will indicate if there is a different office of responsibility **(T-2)**.

1.1.3. For purposes of this AFMAN, AFDW is considered a MAJCOM.

1.1.4. Commanders. For Air Force Global Strike Command (AFGSC), the 582d Helicopter Group Commander (HG/CC) is equivalent to Operations Group Commander (OG/CC) and has all Wing Commander (WG/CC) authorities for all references within this AFMAN to the OG/CC and/or WG/CC **(T-1).**

1.1.5. Pilot in Command Authority. The pilot in command is responsible for, and is the final authority for the operation of the aircraft. (T-1). Pilots will use best judgement to safely conduct flying operations. (T-1).

**1.2. Deviations and Waivers.** The waiver authority for this manual is the MAJCOM/A3 unless otherwise indicated. When an operational necessity exists and time does not allow pursuit of a waiver through normal channels, the OG/CC has one-time waiver authority to this manual. Report all deviations without an approved MAJCOM waiver to the MAJCOM/A3 within 10 duty days of the occurrence. MAJCOM points of contact will forward a copy of waiver or details of circumstances to AFGSC/A3TO for information only **(T-2)**. Do not deviate from the policies and guidance in this manual except:

**1.2. (PACAF) Deviations and Waivers.** For non-tiered compliance items, the 374th Operations Group Commander (374 OG/CC) is the waiver authority for this supplement. Coordinate waiver requests and deviation reports through the squadron chain of command and 374 OG/OGV. For all other waivers, route in accordance with DAFI 33-360.

1.2.1. Aircraft Commanders (AC) may deviate from this directive as necessary to protect their crew and aircraft and/or to save lives.

1.2.2. When circumstances require, this publication provides guidance for helicopter operations under most circumstances, but it does not substitute for sound judgment. If within communications range of command and control agencies, deviations due to unusual circumstances should be pre-coordinated.

**1.3. Supplements.** MAJCOM supplements shall not be less restrictive than this manual and shall be in accordance with (IAW) AFI 33-360 **(T-2)**.

**1.4. Development of New Equipment and Procedures.** Units desiring to use new or not previously approved equipment, to include mission equipment, must obtain individual MAJCOM, AFGSC and Warner-Robins Air Logistics Center (WR-ALC) approval via AF Form 1067, *Modification Proposal*, prior to testing and/or use **(T-2)**.

## Chapter 2

## GENERAL OPERATING GUIDANCE

**2.1. General.** AFGSC is the lead command for UH-1N operations and will coordinate manual changes and dissemination of revised information. Individual MAJCOMs may establish command and control guidelines in their supplements **(T-2)**.

**2.2. Aircraft Commander Responsibility and Authority.** For all flights, units will designate an AC on a flight authorization form, or equivalent, in accordance with AFI 11-401, *Aviation Management*, as supplemented by MAJCOMs **(T-2)**. ACs are:

2.2.1. In command of all persons aboard the aircraft and vested with the authority necessary to manage their crew and accomplish the mission.

2.2.2. Responsible for the welfare of the crew and the safe accomplishment of the mission. This begins upon notification and terminates upon completion of the debrief. If the AC determines that conditions are not safe to prosecute the mission, the aircraft will not depart until the condition is adequately mitigated **(T-2)**.

2.2.3. The final mission authority and will make decisions not specifically assigned to higher authority **(T-2)**.

2.2.4. Charged with keeping the applicable commander informed concerning mission progress and/or difficulties.

2.2.5. The final authority for asking for and accepting waivers affecting the crew or mission.

2.2.6. Responsible for ensuring aircraft security when away from home station.

2.2.7. The focal point for interaction between aircrew and mission support personnel.

**2.3. Flight Lead.** Units will designate a Flight lead (FL) for all formation flights **(T-2)**. The FL is in charge of the entire formation and is responsible for mission accomplishment. Other than formation training, MAJCOMs may supplement what missions are considered formation and require a FL.

**2.4. Mission Monitoring.** Units will accomplish local and off-station mission monitoring in accordance with MAJCOM supplements and operations group policies **(T-2)**.

**2.5. Support to Civil Authorities/Civilian Law Enforcement Agencies.** Within the United States and its territories, request for helicopter support by civil authorities is handled IAW AFI 10-801, *Defense Support of Civil Authorities*. Defense Support of Civil Authorities operations are divided into three broad categories---domestic emergencies, designated law enforcement support, and other activities-and may overlap or be in effect simultaneously, depending upon the event. MAJCOMs operating outside of the United States and its territories may provide support IAW Combatant Command guidance and local directives.

2.5.1. Civil Search and Rescue (SAR). Units within the continental United States must have an Air Force Rescue Coordination Center (AFRCC) mission number prior to conducting an operational civil SAR mission **(T-2)**. This does not preclude a unit from preparing and posturing for a mission while waiting for the AFRCC number. An AFRCC mission number does not shift Operational Control and confirms the request meets specific criteria, but

units/ACs may withdraw support if the mission details have changed significantly. The AFRCC may be reached 24/7 at 1-800-851-3051 or DSN 523-5955. All civil SAR support will be IAW Department of Defense Instruction (DoDI) 3003.01, *DoD Support to Civil Search and Rescue (SAR)* **(T-0)**, and AFPD 10-45, *Air Force Support to Civil Search and Rescue* **(T-2)**. Additional source documents for the national SAR system can be found at **https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/US-Coast-Guard-Office-of-Search-and-Rescue-CG-SAR/NSARC/**.

2.5.2. Posse Comitatus Act. Assistance to Civilian Law Enforcement Agencies. In general, military units are prohibited by law from participating in civil law enforcement activities (this does not include SAR requests from law enforcement agencies). See AFI 10-801, Defense Support of Civil Authorities, or consult with the Judge Advocate's office for more information. Units will report all requests for assistance and coordinate all requests from civilian law enforcement authorities through the appropriate chain of command **(T-2)**.

2.5.3. Utilization of Civilian Law Enforcement or Medical Personnel. Civilian law enforcement or medical personnel may be required to perform duties at an incident site. These duties may include death determination or human remains removal. If a mission requires transporting such personnel to an incident site, AC must understand that Local/ domestic law (such as Posse Comitatus Act), host nation law or international laws may affect mission prosecution. and AC should be reviewed or be briefed on applicable laws and Rules of Engagement prior to deployment/pickup of civilian personnel. Approval Authority to carry civilian law enforcement or medical personnel on SAR or Medical Evacuation (MEDEVAC) missions may be delegated to the AC under certain circumstances. If the AC determines passengers are essential for the successful completion of the mission, and they are unable to contact their controlling agency for approval, passengers may be carried on the segments of flight requiring their presence. Leave a copy of the passenger manifest with a responsible person IAW AFI 11-202V3.

2.5.4. Human Remains. Rescue personnel should not normally remove human remains from crash or incident sites. Units will leave the decision to remove the remains from a site solely to the local authorities **(T-2).** Except as per **paragraph 2.5.4.1**, units will not commit resources to the removal of human remains until the mission approval and/or releasing authority (normally the Wing/Group Commander) has been informed and approved the request **(T-2).** The AC is responsible for the safety of resources and should not jeopardize them for the recovery of human remains **(T-3).** The AC is responsible for compliance with all directions given by local civil authorities concerning the proper removal and handling of remains in that jurisdiction (T-3). Written authorization from the proper local authorities should be received prior to removal; however factors such as accessibility to the area, weather conditions, darkness, etc. may preclude the practicality of receiving written authorization from local authorities. In such cases, a verbal authorization may be accepted if followed by a written authorization. (See **Attachment 2,** Example Authorization to Remove Human Remains.)

2.5.4.1. Exceptional Cases. In extreme situations where time is critical and communications are impossible, the AC may remove remains and deliver them to the proper authorities if given authorization from the appropriate civil official. This procedure is authorized only if conditions already make it impossible to obtain timely approval from the mission approval and/or releasing authority. Whenever this procedure is employed, the

AC shall request and comply with all directions given by local civil authorities concerning the proper removal and handling of remains in that jurisdiction **(T-3)**.

2.5.5. **(Added-PACAF)** Japanese civilians aboard USAF aircraft. Local Fire Disaster Management Agency (FMDA), Police, Mountain Rescue, or other prefectural personnel may have an inherent capability to affect the recovery of personnel in distress. Aircraft Commanders will attempt to contact the operations supervisor via all means available prior to carrying these personnel and relay their qualifications (T-3). Personnel may be inserted into the incident location via any means the crew can assess they are safely trained to. If personnel have no training on the AIE device to be used, ensure they are secured to trained personnel.

**2.6. Passenger Guidance.** The UH-1N is a utility aircraft and is utilized through a variety of mission sets, including passenger transport. DoDI 4515.13, Air Transportation Eligibility, and AFI 11-401 contain guidance on passenger airlift and orientation flights. Units must ensure compliance with these publications for passenger transport covered by their provisions (T-2). The following guidance addresses passenger transport not covered by the provisions of DoDI 4515.13 and AFI 11-401.

2.6.1. Passengers may be flown on UH-1N aircraft during the normal course of exercise and contingency operations of the unit. MAJCOMs will detail the approval authority of these passengers in a supplement to this AFMAN.

2.6.1.1. **(Added-PACAF)** During exercises and contingency operations, passengers will be approved by the OG/CC (T-3).

2.6.2. Direct Mission Support denotes a mission where passengers are flown for specific purposes in support of Department of Defense (DoD) missions (e.g., missile site support) where helicopter airlift is specifically needed to accomplish the mission. This does not include routine point-to-point travel of a passenger. MAJCOMs will detail the approval authority of these missions in a supplement to this AFMAN.

2.6.2.1. **(Added-PACAF)** Approval authority for DMS (e.g. Secret Service Support, medical test transportation, US Embassy Support) is the OG/CC.

2.6.3. Restrictions. Aircrew will not perform simulated emergency procedures with passengers onboard **(T-2)**. Passengers will be restrained by the safest means possible while still enabling the supported passenger to accomplish their mission **(T-2)**. The AC will ensure passengers are given a safety briefing and are familiar with the mission profile and events before the flight **(T-2)**.

2.6.4. Manifests. Units/aircrew will manifest and brief all passengers IAW Technical Order (T.O.) 1H-1(U)N-1CL1, *Pilot's Flight Crew Checklist*, AFI 11-401, *Aviation Management*, and MAJCOM guidance **(T-2)**.

2.6.4.1. **(Added-PACAF)** Crews will use the DD Form 2131, *Passenger Manifest*, the DD Form 2768, *Military Air Passenger/Cargo Request*, or 459 AS Form H1, *UH-1 Mission Itinerary Report/Passenger Manifest* to annotate passengers aboard the aircraft (T-3).

2.6.5. When passengers are in the cargo compartment, aircrew will ensure the cargo doors remain closed during flight unless an aircrew member is also in the cabin **(T-3)**. Unit commanders may authorize aircrew to open the cargo doors if a valid need exists and the passengers are thoroughly briefed on cabin personnel and equipment security.

2.6.5.1. **(Added-PACAF)** DV configured aircraft will have the cargo doors remain closed during flight (T-3). While DV configured, the cargo doors may be opened during critical phases of flight by a UH-1N qualified aircrew member. The aircraft commander is the final approval authority for maintaining cargo doors opened or closed during all other configurations and will ensure all items are secured before flight (T-3).

**2.7. Mission Essential Personnel (MEP).** Refer to AFI 11-401, *Aviation Management* and MAJCOM Supplement.

## Chapter 3

## AIRCREW COMPLEMENT AND MANAGEMENT

**3.1. Primary Crewmembers.** Crewmembers occupying a primary duty position during flight must be UH-1N qualified and current for the mission events to be flown, conducting training/re-currency for that crew position/mission IAW AFMAN 11-2UH-1NV1, *Helicopter Aircrew Training*, or designated as a supervisory flyer IAW AFI 11-401 **(T-2)**.

3.1.1. Instructor Training Requirements. One instructor is required for each duty position requiring student flight training. Instructors are responsible for the actions of their students. **(T-2)**.

3.1.2. MAJCOM supplements will specify operational missions on which training is allowed and provide waiver authority guidance for other operational missions **(T-2)**.

3.1.2.1. **(Added-PACAF)** Flight training can be conducted along with an operational mission as long as the training does not interfere with the operational mission.

3.1.3. Functional check flight (FCF) certified crewmembers maintaining basic aircraft qualification that are non-current or unqualified for operational/special mission items may perform FCFs.

3.1.4. After completion of the Key Staff Course (see AFMAN 11-2UH-1NV1), supervisory flyers, as designated in AFI 11-401, may fly on all mission profiles approved by their MAJCOM. Only supervisory flyers who are rated pilots are allowed to access the flight controls.

3.1.4.1. **(Added-PACAF)** The following profiles are approved for supervisory flyers who have completed the Key Staff Course: BAQ events, EPs, Instruments in VMC, Day/NVG Unprepared Landing Sites, and AIE Operations.

**3.2. Interfly.** An interfly is the exchange and/or substitution of aircrews and aircraft between MAJCOMs. The OG/CC (or equivalent) of the unit possessing the aircraft is the approval authority for MAJCOM interflys.

**3.3. Intrafly.** An intrafly is the exchange and/or substitution of aircrew members from separate units under the same MAJCOM. The OG/CC possessing the aircraft is approval authority for intrafly between units.

**3.4. Minimum Crew.** The minimum crew required for flight defined in T.O. 1H-1(U)N-1, *USAF Series UH-1N Helicopter*, is one pilot. MAJCOMs will supplement the minimum crew required for all mission profiles flown by their assigned units, including waiver authority. MAJCOMs will ensure minimum crew requirements are set to minimize risk to safety of flight and mission accomplishment in all conditions that may be reasonably encountered. At no time will personnel not authorized per AFI 11-401 manipulate flight controls. **(T-2)**.

**3.4. (PACAF) Minimum Crew.** The minimum crew for the UH-1 operations in PACAF is defined in **Table 3.1** and waived by the OG/CC.

**Table 3.1. (Added-PACAF) Crew Complement (T-3).**

| Mission/Profile | Minimum Crewmembers | | |
|---|---|---|---|
| | Pilot | FE | Scanner |
| Emergency Procedures Training | 2[1] | | |
| Instruments (VFR or IFR) | 2 | | |
| Unprepared Landing Site[2] (Day, Unaided Night & NVG), Distinguished Visitor (DV)/Pax/Cargo Airlift/Cross Country/Ferry | 2 | | |
| FCF[3] | 2 | | |
| Alternate Insertion and Extraction (AIE) Operations, Parachute Delivery, SAR/MEDEVAC, Air Ambulance | 2 | 1 | |
| Day Low Level/Day Formation[4] | 2 | | 1 |

**Note:**

1. At least one pilot must be an instructor pilot (IP)/flight evaluator pilot (EP), designated on the flight orders under duty position as IP or EP, and occupy a pilot seat with a set of controls.

2. Review AF IMT 4303 for site specific crew complement. For unprepared landing sites without an existing AF IMT 4303, a Flight Engineer is required.

3. FCF ground runs may be conducted with 1 pilot. Flight Engineers may fly on FCFs, but they must be FCF certified and will not fly in a pilot's seat. Additional crewmember as defined/required by TO 1H-1 (U)N-6CF-1, *Flight Manual Acceptance and Functional Checkflight Procedures* (T-3).

4. For Distinguished Visitor (DV)/PAX/Cargo Airlift/Cross Country/Ferry missions between aerodromes or heliports, minimum formation crew complement is two pilots. For all other formation missions, a scanner is required. Regardless of mission type, formation spacing at less than 3 rotor disks requires a scanner.

3.4.1. **(Added-PACAF)** The minimum crew for non-FCF ground runs to include "Acceptance Checklist" is an aircraft commander. Flight Authorizing Official (FAO) approval and review of Go/No-Go will be accomplished for all engine ground runs (T-3).

**3.5. Maximum Flight Duty Period.** IAW AFI 11-202V3 and MAJCOM supplements.

**3.6. Predeparture Crew Rest.** Medical personnel called to duty for urgent SAR/MEDEVAC missions with less than 12 hours of crew rest can perform lifesaving duties. Because Medical Technicians are Operation Support Flyers (OSF) performing in-flight medical care, no crew rest is required for urgent SAR/MEDEVACs. Medical Technicians require adequate crew rest to conduct flying training **(T-2)**.

## Chapter 4

## MISSION PREPARATION

**4.1. Responsibilities.** The responsibility for mission planning/preparation is shared jointly by the individual aircrew members and the operations and intelligence functions of the organization.

4.1.1. Flight lead/aircraft commanders (or designated crewmember) are responsible for:

4.1.1.1. Overall mission planning, route study, navigation, personnel recovery planning and mission execution.

4.1.1.2. Verifying go/no-go status for all crewmembers.

4.1.1.3. Assess risk management and mitigate appropriately for the flight using MAJCOM guidance.

4.1.1.4. Presenting a logical briefing that promotes safe, effective mission accomplishment. The AC is responsible for ensuring appropriate mission/event briefings are completed prior to accomplishment **(T-2)**. Mission elements/events may be modified and briefed airborne as long as flight safety is not compromised. ACs will ensure changes are acknowledged by all flight members/crewmembers **(T-2)**. Mission brief should incorporate measureable and attainable desired learning objectives for all training events.

4.1.1.5. Briefing flight responsibilities, proper formation position (minimum rotor separation), aircraft unique capabilities, tactics, limitations and requirements for each phase of flight when conducting formation.

4.1.1.6. Conducting a thorough debrief with both aircrew and the appropriate agencies immediately after the return of teams or aircrews from a sortie.

**4.2. Weather:**

4.2.1. Wind Restrictions. Aircrew will discontinue flight when wind velocity exceeds:

4.2.1.1. Training/Exercise Sorties: Forty knots steady state **(T-3)**.

4.2.1.2. Operational Sorties: IAW T.O. 1H-1(U)N-1 *Flight Manual USAF Series UH-1N Helicopter* **(T-3)**.

4.2.2. Visual Flight Rules (VFR) Training/Exercise Weather Minimums. For operational flights, aircrew will comply with the weather minimums in AFI 11-202V3 **(T-2)**. Aircrew will comply with the following criteria for training/exercise flights:

4.2.2.1. Day: minimum of 500 foot ceilings and 1 statute mile visibility **(T-3)**.

4.2.2.2. Night with Night Vision Goggles (NVG): minimum of 500 foot ceilings and 2 statute miles visibility **(T-3)**.

4.2.2.3. Night unaided: minimum of 1000 foot ceilings and 2 statute miles visibility **(T-3)**. **Note**: The above weather minimums do not apply to hover and air taxi operations at the aerodrome.

4.2.2.4. **(Added-PACAF)** If weather is below Visual Flight Rule (VFR) minimums, aircraft may operate under Special Visual Flight Rules (SVFR). However, ceiling and visibility minimums for DV missions are 1,000/2 provided cloud clearances and the

altitude restrictions listed on **paragraph 4.5** can be maintained (T-3). **Note**: Both Yokota ACA and Tokyo ACA are Class E surface to 12,000 MSL. Japan AIP uses the same VFR cloud clearance as the NAS: 3 SM (5 KM) visibility, 1000 feet (300m) above, 500 feet (150m) below, and 2000 feet (600m) horizontal below 10,000 MSL.

4.2.3. Instrument Flight Rules (IFR). In addition to AFI 11-202V3, the following applies:

4.2.3.1. For planned flights in Instrument Meteorological Conditions (IMC) or when IMC is likely, aircrew will complete an instrument cockpit check prior to takeoff **(T-2**).

4.2.3.2. The AN/ASN-175 Global Positioning System (GPS) is not considered a "suitable" Area Navigation (RNAV) system under Federal Aviation Administration (FAA) Advisory Circular 90-108, *Use of Suitable RNAV Systems on Conventional Routes and Procedures*. The AN/ASN GPS is not authorized as a primary instrument for IFR **(T-2)**. It may be used to assist in maintaining situational awareness (SA) on conventional routes and procedures IAW AFI 11-202V3.

4.2.3.3. Aircraft equipped with Helicopter Terrain Awareness Warning System/Traffic Collision Avoidance Device (HTAWS/TCAD) modification Time Compliance Technical Orders (TCTO) 1H-1(U)N-771 or 1(U)N(I)-505 are approved for use during all phases of flight as the primary means of IFR/VFR navigation to include RNAV GPS Approaches.

4.2.3.4. IFR Training Flights. Aircrew will not take off unless weather is equal to or greater than published approach minimums (ceiling and visibility), but no less than 1/2 mile (2,400 runway visual range [RVR]) at the departure airfield for scheduled takeoff time plus one hour **(T-2)**.

4.2.3.5. IFR Operational Flights.

4.2.3.5.1. Without a departure alternate, aircrew will not take off unless weather at the departure airfield is equal to or above the published visibility required for the appropriate aircraft category for an available approach **(T-2)**.

4.2.3.5.2. With a departure alternate, aircrew will not take off unless weather at the departure airfield is equal to or above one-half the published visibility minimum required for the appropriate aircraft category, but no less than 1/4 mile (1,200 RVR) for an available approach **(T-2)**. Weather must be equal to or above published visibility minimum if aircrew use a COPTER approach at the departure airfield **(T-2)**. Pilots will select the departure alternate using the following criteria: **(T-2)**.

4.2.3.5.2.1. Departure alternate should be within one hour flying time **(T-2)**.

4.2.3.5.2.2. Weather enroute to the departure alternate permits flight within aircraft limitations and complies with AFI 11-202V3, Selecting an Alternate, Helicopter criteria. The aircraft must be capable of maintaining minimum enroute altitudes (MEA) or minimum obstruction clearance altitude (MOCA), (whichever is higher) to the alternate if an engine fails **(T-2)**.

4.2.3.5.3. Life or Death Missions**.** The wing commander (or equivalent) determines if a mission is a life or death situation. During these missions, aircrew may take off if the visibility is sufficient to taxi to the takeoff area. The AC ensures an appropriate course of action is available (and briefed) in the event of an emergency after takeoff **(T-3**).

**4.3. Adverse Weather:**

4.3.1. If adverse weather is encountered, the AC will take immediate action to avoid further flight in hazardous conditions by either diverting or landing **(T-2)**.

4.3.2. No mission requires a helicopter to penetrate a thunderstorm. Aircrew may fly into areas of known or forecast thunderstorms if visual meteorological conditions (VMC) are maintained and thunderstorm activity is avoided by a minimum of 5 nautical miles (NM) **(T-2)**. Aircrew will not fly into rain shafts beneath cumulonimbus clouds **(T-2)**.

**4.4. Fuel Planning:**

4.4.1. For all flights, aircrew will plan to arrive at the destination with a minimum of 200 pounds of reserve fuel **(T-2)**.

4.4.2. In addition to landing at the destination with the required reserve fuel, when flying IFR and using visibility-only criteria for the approach or when destination weather may be unreliable, aircrew will plan to use no less than 250 pounds of fuel for descent, approach, and missed approach **(T-2)**.

**4.5. Altitude Restrictions.** Aircrew will conduct all operations at or above 300 feet above ground level (AGL) except when lower altitudes are required for takeoff, departure, arrival, landing, operational missions, training flights in approved areas, approved exercise missions, or when directed lower by a FAA/National Aeronautical Charting Office (NACO) helicopter route chart **(T-2)**.

**4.5. (PACAF) Altitude Restrictions.** Except when necessary for take-off or landing, or except by permission from the appropriate authority, Aircrew will conduct all operations over congested areas at or above 1000 feet AHO within 2,000 feet radius from the aircraft and 500 feet AGL over non-congested areas. See ICAO Publication Annex 2: Rules of the Air, paragraph 4.6.

4.5.1. For unaided night flight, aircrew will maintain an enroute altitude of 500 feet above highest obstacle (AHO) within 5 NM of the flight path unless directed lower by a FAA/NACO Helicopter Route Chart **(T-3)**.

4.5.2. Operational Searches. Altitudes are determined by the AC.

4.5.3. Training Searches. For search training below 300 feet AGL, aircrew must be in a surveyed low level area **(T-3)**. Aircrew will conduct day and NVG search training no lower than 100 feet AHO. Aircrew will not conduct night unaided search training **(T-3)**.

4.5.4. Low-Level. Flight below 300 feet AGL is considered low-level. Published FAA/NACO helicopter routes are not considered low-level.

4.5.4.1. For enroute operations over land, aircrew will fly no lower than 50 feet AHO during the day or at night with NVGs **(T-2)**.

4.5.4.2. During enroute flight over water, aircrew will fly no lower than 50 feet Above Water Level (AWL) during the day or 150 feet AWL at night with NVGs **(T-2)**.

**4.6. Low-Level Flight.** Aircrew will only conduct low-level training in a surveyed low-level flight area **(T-2)**. Specific geographical areas such as missile complexes and operational areas may be designated as low-level flight areas. Units will establish defined boundaries and meet the following requirements prior to any low-level flight:

4.6.1. Established low-level surveyed routes or Low Altitude Tactical Navigation areas. MAJCOMs will establish guidance IAW AFI 13-201, *Airspace Management* **(T-2)**.

4.6.2. Units will annually survey all helicopter low-level flight areas **(T-2)**. For low-level flight areas, units will verify all man-made obstacles above 50 feet AGL (or commensurate with the lowest altitude flown within the area) and document all new man-made obstacles on the master chart and flight charts **(T-2)**. Annotate the survey date on the master chart. **WARNING:** During low-level surveys, pay close attention to the possibility that wires may be draped across a valley while the supporting poles are not visible from low-level navigation altitudes.

4.6.3. If low-level helicopter flight operations have not been conducted in a designated area for greater than six months, units will conduct a resurvey before any low-level training flights are conducted in the area **(T-2)**.

**4.7. Illumination and NVG Requirements. WARNING:** Lack of sufficient illumination may prevent NVG contour operations in otherwise VMC conditions. **WARNING:** NVGs worn in very low illumination conditions can lead to induced motion illusions and spatial disorientation.

4.7.1. NVG operations at any altitude require sufficient illumination to safely identify terrain and hazards commensurate with aircraft speed and altitude.

4.7.2. The AC is the decision authority for determining sufficient illumination exists to complete the mission.

4.7.3. Due to increased risk, units will establish an additional level of Operational Risk Management (ORM) for training or operational flights during periods of low effective illumination **(T-2)**. Low effective illumination is defined as less than 10% moon disk/moon illumination on a clear, cloudless night on any portion of the route of flight. ORM and mission planning must consider cloud cover, visibility, moon angle, cultural lighting, and other factors affecting illumination. **(T-3)**.

**4.8. Takeoff and Landing Data (TOLD).**

4.8.1. In accordance with T.O. 1H-1(U)N-1, aircrew will complete and brief TOLD cards prior to takeoff **(T-2)**. Compute data applicable to the mission profile. For mission events, aircrew should complete a separate worst case TOLD card during pre-mission planning. Tab data is provided in T.O. 1H-1(U)N-1 to facilitate computing TOLD while in flight. TOLD may be computed using flight manual charts, Tab data contained in T.O. 1H-1(U)N-1CL-1, or MAJCOM approved TOLD application for an approved electronic flight bag (EFB).

4.8.2. Aircrew must recalculate and brief TOLD for approaches if conditions become less favorable (i.e., gross weight, pressure altitude, or temperature increase) **(T-3)**.

4.8.3. Aircrew will confirm and brief TOLD prior to beginning approaches when power required is within 10% of power available, when out of ground effect (OGE) power is not available, or at the discretion of the AC **(T-2**). Aircrew will post the TOLD card at the discretion of the AC **(T-2)**.

**4.9. Weight and Balance.**

4.9.1. The AC, or designated crewmember, will compute crew/passenger/equipment off-loading or on-loading to ensure center of gravity (CG) and weight limits are not exceeded **(T-**

**2)**. Confirm basic aircraft weight and moment with certified DD Form 365-3, *Weight And Balance Record, Chart C – Basic*. These computations will address the maximum number of personnel/maximum amount of equipment allowed in the cargo compartment without exceeding CG or structural limitations **(T-2)**. This procedure applies to all operations in which CG or weight limits may be exceeded as a result of personnel/equipment on or off-loading. A manual or electronic DD Form 365-4, *Weight and Balance Clearance Form F – Tactical/Transport* may be used. MAJCOMs must approve any electronic system other than the Automated Weight and Balance System (AWBS).

4.9.2. AWBS. Use the most recent version of AWBS found on their official website, **https://awbs.hill.af.mil**. Refer to T.O. 1-1B-50, *Aircraft Weight and Balance*, for installation requirements. Use the transport side of the form **(T-3)**.

4.9.3. Use a DD Form 365-4, for each flight. The DD Form 365-4 records the weight, moment, and CG calculations for a specific loading arrangement on a specific aircraft to ensure the aircraft remains within its safe weight and balance limitations. These forms are prepared for use on a one-time basis **(T-3)**.

4.9.3.1. Standard Aircraft Configurations (Canned). Aircraft configuration encompasses weight, CG, cabin equipment/seating/personnel layout, and mission equipment (i.e., forward looking infrared (FLIR), hoist, life raft, cargo hook, alternate insertion or extraction (AIE) devices, guns). DD Forms 365-4 may be prepared for standard aircraft configurations used by the unit. These canned forms are authorized when an aircraft's weight, moment, and CG remain within limits found in T.O. 1H-1(U)N-5, *Basic Weight Checklist and Loading Data*.

4.9.3.2. These forms (either computerized or expendable pad version) must be filed and maintained in both the primary and supplemental weight and balance handbooks **(T-3)**. Aircrew may use these forms only for the configurations they were designed/computed for, and units must check them for accuracy at least every 180 days **(T-3)**.

4.9.4. Initial Takeoff Gross Weight.

4.9.4.1. If the initial takeoff condition gross weight changes by more than 500 pounds, aircrew must generate a new or corrected DD Form 365-4 **(T-3)**.

4.9.4.2. When initial takeoff condition gross weight does not change by more than 500 pounds, then a new or corrected DD Form 365-4 need not be generated. Even though no written adjustments are required, aircrew will calculate the new gross weight and CG and ensure limits are not exceeded **(T-2)**.

4.9.4.3. Brief the AC on the new gross weight and CG prior to take-off, as required.

4.9.5. Aircrew will make zero fuel weight computations on the DD Form 365-4 **(T-2)**.

## 4.10. Charts.

4.10.1. Units will maintain a master chart depicting the low-level flight areas for flight planning purposes **(T-2)**. Units will annotate all man-made obstacles over 50 feet AGL (or commensurate with the lowest altitude flown) **(T-2)**. Additionally, annotate any published low-level routes, no-fly areas, noise abatement areas, or other hazards within the boundaries. Master charts will be updated monthly using the Chart Update Manual (CHUM) supplement **(T-2)**. The date of the CHUM update will be annotated on the master chart **(T-2)**.

Crewmembers should continuously scan for uncharted obstacles. When uncharted obstacles are found, aircrew will temporarily suspend training and record appropriate information on to the aircrew chart (location and approximate height AGL) **(T-3)**. ACs will ensure this information is immediately passed to appropriate supervisors upon landing **(T-3)**.

4.10.2. Units will ensure charts used for flying reflect the same information as the master chart **(T-2)**. Crewmembers will ensure the chart is updated and annotated using the latest CHUM **(T-2)**. ACs will ensure a copy of the planned route or flight log/AF Form 70, *Pilot's Flight Plan and Flight Log*, is available at the unit **(T-3)**.

**4.11. Route Planning.** Aircrews will review and de-conflict low altitude charts for IFR, VFR, and slow speed low altitude (IFR military training routes, VFR military training route, and slow speed training routes) training routes and annotate potential conflict areas along the proposed routes during pre-mission planning **(T-2)**.

**4.12. Over Water.** The aircraft is considered "over water" anytime it is not in a position to autorotate to the shore. All altitude restrictions, power requirements, aircrew flight equipment, and aircraft equipment requirements apply.

**4.13. Alert Aircraft.** Maintain aircraft on alert status as follows:

4.13.1. Park the aircraft in a designated alert parking area/hangar to expedite taxi and takeoff. **(T-3)**.

4.13.2. Plan preflight validity periods to limit the need to update the preflight during an alert period. Should the aircraft remain on alert for more than 72 hours, regardless of whether it has flown or not, a complete aircrew preflight and Acceptance Check is required **(T-2)**.

4.13.3. The alert aircraft may be flown for purposes other than actual alert missions provided the following conditions are met: **(T-3)**.

4.13.3.1. Alert requirements can be met with sufficient fuel to meet mission requirements **(T-3)**.

4.13.3.2. Communication contact is maintained with the primary controlling agency **(T-3)**.

4.13.3.3. Controlling agencies are notified any time the alert aircraft departs the local area **(T-3)**.

4.13.4. Thru-Flight Inspections. IAW T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* the maintenance thru-flight inspection is a between flights inspection and will be accomplished after each flight when a turnaround sortie, continuation flight or continuation of alert is scheduled and a basic post-flight inspection is not required **(T-2)**. The thru-flight inspection consists of checking the aerospace vehicle for flight continuance by performing visual examination and/or operational checks of certain components, areas, or systems, according to established T.O.s to ensure that no defects exist which would be detrimental to further flight. An alert crewmember or other UH-1N aircrew member designated by the Mission Commander will be present during the thru-flight inspection or at the completion of the thru-flight inspection to ensure all cowlings/access doors are secure and to check the areas in which the inspection and/or maintenance was performed **(T-2)**.

4.13.5. Aircrews will perform the ACCEPTANCE and COCKING checklists (hoist and weapons inspections as applicable) to place the aircraft on alert status **(T-2)**. Once accepted for alert, make the following entry in the AFTO FORM 781A, *Maintenance Discrepancy and Work Document*: - "Aircraft accepted for alert_____(time/date). Acceptance check, hoist check (as applicable), and weapons check (as applicable) performed." IAW T.O. 1H-1(U)N-1CL1, an alert crewmember will be present whenever maintenance is performed **(T-2)**. If an alert crewmember is not available, mission commanders may authorize another UH-1N aircrew member to check the area in which maintenance was performed and ensure the alert crew is briefed on the maintenance actions. The check must be performed prior to flight **(T-2)**.

4.13.5. **(PACAF)** Refueling and towing are both considered minor servicing; therefore a crewmember does not need to be present to supervise the refueling and towing operation when an aircraft has been accepted for alert.

**4.14. Alert Procedures.** Alert crews will conduct an aircrew briefing at the beginning of each alert period **(T-2)**. Alert crews are authorized to prepare TOLD and DD Form 365-4 using the worst weather conditions expected during the alert period. This TOLD will be used only for alert scrambles. If the alert aircraft is flown for other reasons, new TOLD will be accomplished **(T-3)**. Weather and TOLD will be updated and briefed at least once each 24 hour period and also when conditions change significantly or are forecasted to change significantly from the original forecast **(T-3)**.

4.14.1. When an alert crew change occurs, and the same aircraft remains on alert, there is no requirement to perform another preflight. Should the aircraft remain on alert for more than 72 hours, regardless if it has flown or not, complete another full Acceptance Check.

4.14.2. When an alert aircraft changes, the alert crew will perform Acceptance and Cocking Checks of the aircraft **(T-2)**. If the alert crew is not available, other qualified aircrew may perform the PREFLIGHT INSPECTION, ACCEPTANCE, and COCKING checklists at the Mission Commander's discretion.

4.14.2. **(PACAF)** Crewmembers. Aircrews will be given 12 hours of crew rest prior to being placed on alert (T-3). Crews must be released for crew rest or alerted within 72 hours of entering alert (T-3).

4.14.3. **(Added-PACAF)** "Official alert duties" are defined as alert scrambles to include exercising the crew on scramble procedures, cocking the aircraft, or a standby preparation call. Flight duty period does not begin for routine checking/briefing weather and NOTAMS, power-on checks (light checks) i.e., those checks accomplished without engine start or aircraft acceptance (walk around and forms check) if performed during normal waking hours (0600-2200L).

# Chapter 5

# NORMAL OPERATING PROCEDURES

## 5.1. Aircrew Uniforms and Protective Devices:

5.1.1. When reporting for flying or alert duties, all crewmembers will wear appropriate flying clothing IAW AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program,* and carry a set of identification tags on their person IAW AFI 36-3802, *Force Support Readiness Programs* **(T-2)**. Commanders will determine additional requirements appropriate for the terrain and climatic conditions **(T-3)**.

5.1.2. All crew chiefs and maintenance/logistic support personnel will wear Nomex® flight gear when flying on helicopters **(T-3)**. Civilian maintenance contractors must abide by local contract requirements **(T-3)**.

5.1.3. Personnel whose duties require them to be within 30 feet of an operating helicopter will wear eye and ear protection **(T-3)**. **NOTE**: This does not apply for quick loading and unloading of passengers and equipment.

5.1.4. Aircrews will ensure hearing protection is available prior to flight **(T-3)**. The AC or designated crewmember will be responsible for distributing these devices to all passengers **(T-3)**.

5.1.5. Chemical/ Biological Warfare Individual Protective Equipment will be worn IAW MAJCOM procedures **(T-2)**.

**5.2. Aircrew Publications/Checklists.** All crewmembers will carry current applicable T.O. 1H-1(U)N-1CL-1 and AFMAN 11-2UH-1NV3, CL-1 to this manual during flight **(T-2)**. All aircrew will maintain current copies of all flight publications (electronic or paper copy) listed under Publications Check in AFMAN 11-2UH-1NV2, *UH-1N Aircrew Evaluation Criteria* **(T-2)**.

5.2.1. Crewmembers may omit checklist pages not applicable to their unit operations as determined by the unit commander. Insert current, approved flight manual checklists in the USAF flight crew checklist binder or electronically in an approved EFB **(T-3)**. Additional notes amplifying checklist procedures and limitations may be added. Currency of notes is the crewmember's responsibility **(T-3).**

5.2.2. Copies of the Before Takeoff, Before Landing, Hoist Operators Before Pickup, Hoist Operator's After Pickup, Smoke/Flare Drop, Scramble, and Weapons System Emergency checklists may be posted in the cockpit and/or cabin at the discretion of the unit.

**5.3. Mission Kits.** Unit commanders may supplement the minimum contents of the kit shown in **Table 5.1**. Items carried by crewmembers or stored on the aircraft need not be duplicated in the mission kit. A mission kit is required for all flights except on FCFs **(T-3)**. During FCFs, a copy of the T.O. 1H-1(U)N-1 and T.O. 1H-1(U)N-6CF-1, *Acceptance and Functional Checklist Procedures,* is required on board **(T-3)**. FLIP shall include coverage for entire area of planned operations **(T-3)**. Any aircrew member's EFB that has all mission kit contents may act as the mission kit, with the following exceptions: AF Form 70; AF Form 457; *USAF Hazard Report;* AF Form 651, *Hazardous Air Traffic Report (HATR);* Standard Form 44 (SF44), *Purchase Order-Invoice-Voucher;* AFMAN 11-2UH-1NV3 CL-1; and T.O. 1H-1(U)N-1CL-1 will be on board as paper copies **(T-3)**.

**Table 5.1. Mission Kit Contents (Minimum).**

| **Flight Documents/Flight Publications** | |
|---|---|
| T.O. 1H-1(U)N-1 | AFI 11-202V3 |
| T.O. 1H-1(U)N-5 | AFMAN 11-2UH-1NV3 (and applicable supplements), *UH-1N Helicopter Operations Procedures* |
| T.O. 1H-1(U)N-2-1 CL-2, *Refueling/Defueling* | Supplemental Weight & Balance Handbook |
| Flight Information Handbook | Low Altitude Instrument Approach Procedures (two sets for area of operation) |
| Enroute Low Altitude Charts (one set for area of operation) | IFR/VFR/Enroute Supplement (as applicable for geographical area) |
| AF Form 70 | AF Form 457 |
| SF44 | AF Form 651 |

**5.4. Aircrew Charts.** Pilots will ensure they flight plan and fly with current charts **(T-2)**. A current chart consists of the most recent edition available with updates from the Chart Updating Manual posted on it and annotated as such. ACs will ensure HTAWS database in the aircraft is current prior to flight **(T-2)**. Unit commanders will ensure procedures are in place to maintain the currency of HTAWS databases on unit assigned aircraft **(T-3)**.

**5.5. Minimum Aircraft Equipment and Instrumentation.** Minimum aircraft equipment and instrumentation is listed in **Table 5.2**. Additional information can be found in AFI 11-202V3 and AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*.

5.5.1. In addition to requirements in AFI 11-202V3, the final decision regarding equipment required for a mission rests with the AC. When the AC considers an item essential for the accomplishment of the mission, the AC will designate the component mission-essential and it will be repaired or replaced prior to departure **(T-3)**. Acceptance of an aircraft by an AC to operate one mission (or mission segment) without an item or system does not commit that AC or a different AC to subsequent operations with the same items/systems inoperative.

5.5.2. Radar Altimeter. Two operational radar altimeters are required for all low-level flight. At least one radar altimeter must be operational for night operations (aided and unaided) below 500 feet AHO **(T-2)**.

5.5.3. Water Operations Training. Crews conducting water training sorties may use a helicopter covership or safety boat in lieu of carrying a life raft for non-open ocean training.

5.5.3.1. Helicopter Covership Requirements. Helicopter coverships will maintain constant line-of-sight communications with deploying helicopter at all times and remain

within 5 NM **(T-2)**. Coverships will be equipped with an operable hoist or carry a life raft for deployment **(T-2)**.

5.5.3.2. Cover (Safety) Boat Procedures. The boat party and helicopter will maintain positive visual contact at all times and minimize the distance between the boat and deploying team to ensure prompt response **(T-2)**. All live swimmer water operations require positive radio contact **(T-2)**. If radios are unavailable or inoperable, swimmer team lead will carry an overt and pre-briefed emergency signal **(T-2)**.

**Table 5.2. Minimum Aircraft Equipment and Instrumentation.**

| Equipment | Day | Night/NVG | IMC | Over water |
|---|---|---|---|---|
| Altimeter [1] | X | X | X | X |
| Attitude Direction Indicator (ADI)[1,5] | X | X | X | X |
| Heading Indicator [1] | X | X | X | X |
| Airspeed Indicator [1] | X | X | X | X |
| Dual Torque Indicator | X | X | X | X |
| Triple Tachometer | X | X | X | X |
| Engine Instruments | X | X | X | X |
| Transmission Instruments | X | X | X | X |
| Combining Gearbox Instruments | X | X | X | X |
| Navigation Instruments [2] | X | X | X | X |
| Communication Equipment [2] | X | X | X | X |
| Restraint devices for all crew/passengers | X | X | X | X |
| Position and Anti-Collision lights | X | X | X | X |
| Landing/Searchlight [3, 4] | X | X | X | X |
| Cockpit Instrument lights | | X | | |
| Pitot Heat | | | X | |
| Life Preserver Unit (LPU)s | | | | X |
| Helicopter Emergency Egress Device (HEED)s | | | | X |
| Life Rafts [6] | | | | X |

Notes:
1. At least one operative, on whichever side is occupied by the AC.
2. As required for flight profile.
3. At least one operational.
4. If infrared filter installed on the searchlight, the landing light must be operational **(T-2)**.
5. IMC flight requires two operative ADI's.
6. Life rafts are not required for non-open ocean water training sorties when cover is provided by a boat or hoist equipped helicopter. See **paragraph 5.5.3** for covership/safety boat requirements.

**5.6. Restraint Devices.** When rotors are engaged, at least the pilot on the controls will have his/her seat belt and shoulder harness fastened and secured **(T-2)**. All crewmembers will wear a seat belt when conducting practice emergency procedures **(T-2)**. All occupants in the cabin

compartment will wear a seat belt, authorized restraint device, or parachute when doors are open during flight **(T-2)**.

5.6.1. With the cabin doors closed, the AC may direct crewmembers to perform duties in the cabin unrestrained for brief periods when required to don harnesses, attend to passengers, or change seats. Parachutists may change positions with doors open if parachutes are worn and the aircraft is higher than 1,000 feet AGL.

5.6.2. For alternate loading of passengers and crewmembers, refer to Air Force Tactics, Techniques, and Procedures (AFTTP) 3-3.H-1, *Combat Aircraft Fundamentals—H-1*.

5.6.3. The AC may direct crewmembers to perform duties requiring the use of a MAJCOM approved restraint device in lieu of a seat and seat belt when mission requirements dictate. Attach the restraint device to any tie down ring on the floor or to any seat belt ring as long as the seat belt is not simultaneously in use (does not prevent crewmember from attaching their restraint device to their own seat belt ring) **(T-2)**. Only one restraint device can be attached to a tie down ring at the same time **(T-2)**. Do not attach the restraint device to cargo tie down rings on the bulkhead or ceiling. Adjust the length of the restraint device to preclude accidental exit from the aircraft **(T-2)**. **WARNING:** An improperly adjusted restraint device may result in injury or loss of life.

5.6.4. If a valid mission requirement exists, in lieu of seat belts, ACs may permit OSFs and MEPs to be restrained with a MAJCOM approved restraint device. ACs must ensure that these personnel are thoroughly familiar with the use of restraint devices and are fully briefed on all pertinent safety considerations **(T-3)**.

**5.7. Aerospace Vehicle Flight Data Document.** A crewmember must review all applicable aircraft forms, AFTO Forms 781, before applying power to the aircraft or operating aircraft systems **(T-2)**. An authorized maintenance person, if available, or the AC must sign the exceptional/conditional release before flight **(T-2)**. Ensure the Aviation Into-Plane Reimbursement (AIR Card ®) and DD Form 1896, *DoD Fuel Identaplate*, are aboard the aircraft.

**5.8. Communications Guidance.**

5.8.1. Primary Radio. The AC will tell the crew which radio is the primary radio **(T-2)**. All crewmembers will monitor the primary radio unless specifically directed otherwise by the AC **(T-2)**.

5.8.2. Intercom. All crewmembers will listen to the intercom **(T-2)**. Clearance is required from the AC prior to switching off the intercom. During critical phases of flight, intra-plane transmissions will be limited to those essential for crew coordination **(T-2)**. **NOTE:** Avoid discussing classified information on intercom. If classified discussion is necessary, ensure all wafer switches are in the internal communications system (ICS) position. Also ensure the cockpit voice recorder mute switch and FLIR recorder mute switch are on.

**5.9. Dual Engine Power Available Check.**

5.9.1. Perform the power check as near as possible to the same pressure altitude (PA) and outside air temperature (OAT) as the operating area **(T-2)**. Slowly apply collective pitch without drooping rotor speed (Nr) below 97 percent until computed power or a limit (as defined by the flight manual, section 5) is reached. The engines need to produce power equal to or greater than computed from the power available charts in the flight manual. If the engines fail

to produce computed power or Nr droops below 97 percent prior to reaching computed power or a limit, terminate the sortie. Perform a dual engine power available check for:

5.9.1.1. Operations below 300 feet AGL (except when operating on routes depicted on published FAA/NACO helicopter route charts),

5.9.1.2. Unprepared landing area operations,

5.9.1.3. Search operations,

5.9.1.4. Cargo sling operations,

5.9.1.5. AIE operations,

5.9.1.6. Water operations.

**5.10. Single Engine Power Available Check.** Ensure torque is below single engine power available. Gradually roll one throttle back to flight idle while monitoring the engine instruments to ensure the other engine is able to produce adequate power to sustain flight. Slowly apply collective pitch without drooping Nr below 97 percent until computed power available or a limit (as defined by the flight manual, Section 5) is reached. If the engine fails to produce computed power or Nr droops below 97 percent prior to reaching computed power or a limit, terminate the sortie **(T-2).**

**5.11. Power Required.** All primary flight crewmembers are required to know the power margin for intended operations. Power available versus power required will be briefed prior to final approach **(T-2)**. For multiple approaches to the same area, power available/power required will be briefed for the applicable landing/AIE with the smallest power margin **(T-2)**. Updates will be briefed if gross weight or temperatures increase **(T-2)**.

5.11.1. Comparing power available with highest power required (landing/takeoff/AIE) determines power margin. This is the excess power available for go-around or unforeseen conditions (e.g., wind shifts, null areas, etc.). When the power margin is 10 percent or less, a second aircrew member will re-compute TOLD to confirm power requirements **(T-2)**.

5.11.2. Consider that power available at the site may differ from power available in flight if temperature or PA differs. Reaccomplish power check if conditions change from worst case which will result in a decrease in power available **(T-2)**.

5.11.3. Prior to landing, ensure that sufficient power to depart the planned landing site is available. Factor in any weight that will be added at the site (e.g., survivors) **(T-2)**.

5.11.4. If sufficient power is not available for the approach, landing and/or departure, lighten the helicopter, locate a more suitable landing site, or abort the mission.

5.11.5. Landing Zone Power Requirements:

5.11.5.1. Clear Escape Route. The minimum power available required for areas with a clear escape route is computed hover power for the intended hover height at the landing location **(T-3)**.

5.11.5.2. Restricted Escape Route. The minimum power available required for areas with a restricted escape route is computed OGE hover power for the landing location **(T-3)**.

5.11.5.3. Water Operations. Minimum power available required for water operations is computed OGE hover power **(T-3)**.

5.11.5.4. Restricted Visibility Approach. Any time the pilot flying anticipates losing ground references due to sand, dust, snow, or other obscurations, the minimum power available must be hover power + 5% for the intended hover height **(T-3)**.

5.11.5.5. When landing to a surface area equal to or smaller than the rotor diameter, such as a pinnacle or ridgeline, computed OGE hover power must be available **(T-3)**.

**5.12. Engine Running Crew Change.** For engine running crew changes, the new AC will review the AFTO Forms 781, aircraft weight and balance, configuration, and TOLD **(T-2)**.

**5.13. Fuel Management.**

5.13.1. Preflight. The AC, or designated crewmember, will ensure the pre-planned fuel load is on board the aircraft and will brief the crew on fuel loads that do not meet mission requirements **(T-2)**.

5.13.2. In flight. The AC, or designated crewmember, will monitor fuel transfer and fuel consumption and keep the crew advised of fuel status **(T-2)**.

**5.14. Forced or Precautionary Landings.** Aircraft security and accessibility for maintenance are secondary considerations to aircrew safety. Report all precautionary landings through appropriate channels as soon as communications are established **(T-2)**.

5.14.1. Forced or Precautionary Landings due to In-flight Malfunction.

5.14.1.1. Aircraft malfunctions must be investigated, corrected, and inspected by qualified maintenance personnel **(T-2)**. Coordinate maintenance support via radio, telephone, or any other means available. The OG/CC, Maintenance Group Commander (MXG/CC), or designated representative (cannot be delegated below unit Director of Operations [DO]) is the approval authority required prior to further flight when the precautionary landing occurs at a location where qualified maintenance is not available.

5.14.1.2. In the event a forced or precautionary landing occurs at a location where communications are not available, and the AC determines the aircraft is safe for flight, the AC may authorize further flight. The decision to resume flight under these circumstances must be based on a thorough evaluation of all the hazards and risks involved **(T-2)**.

5.14.2. Precautionary Landings Due to Weather.

5.14.2.1. If deteriorating weather is encountered during VFR operations, consider a precautionary landing a viable option in addition to course reversal, course deviation, or continuing under IFR.

5.14.2.2. The AC may authorize further flight after a precautionary landing for weather. Make a reasonable effort to notify appropriate agencies of the precautionary landing and to determine additional weather information.

**5.15. Obstacle Clearance.** Prior to maneuvering the helicopter in close proximity to obstacles, the aircrew will ascertain that the area is clear **(T-3)**. Whenever horizontal rotor clearance is 25 feet or less, the scanner will inform the pilot of the clock position relative to the nose of the aircraft

and estimated distance to the obstacle from the edge of the tip path plane (for example: "Tree, nine o'clock, 20 feet") **(T-3)**.

**5.16. Fire Guard.** A fire guard will be used, when available, for all engine starts **(T-3)**. If a wheeled extinguisher is not available, the fire guard will have a hand-held fire extinguisher readily available **(T-3)**. Should a fire occur, the fire guard's primary duty is to assist the crew in evacuating the aircraft, not fight the fire at the engine compartment.

**5.17. Refueling Duties.** Aircrew members trained in refueling may perform cold refueling duties. MAJCOMs will establish procedures to certify crewmembers prior to accomplishing hot refueling duties. Conduct hot refueling IAW AFI 11-235, *Specialized Refueling Operations,* T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding,* and appropriate flight manuals **(T-2)**. The guidance in this section supplements the procedures outlined in T.O. 00-25-172, appropriate flight manuals and checklists.

5.17.1. Crewmembers used as refueling supervisors/panel operators will comply with T.O. 00-25-172 and T.O. 1H-1(U)N-2-1 CL-2 to the max extent possible **(T-3)**. At locations with refueling support, aircrews will not refuel unless extenuating circumstances dictate **(T-3)**. When not directly involved in the refueling operation, personnel will remain at least 50 feet from the refuel operation and/or any pressurized fuel carrying servicing component **(T-3)**.

5.17.2. The AIR Card is used to pay for services at commercial fixed base operators (FBO). These include aviation fuel, aircraft oil and fluids or other minor maintenance items. Charges incurred during this routine aircraft servicing generate a charge receipt. The AC is responsible for ensuring the receipt is correct and all appropriate signatures are obtained before departing the FBO **(T-3)**. Log refuel information on the AF Form 664, *Aircraft Fuels Documentation Log,* and AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance,* located in the aircraft 781 forms binder IAW T.O. 00-20-1 **(T-3)**. The AC then ensures that all charge receipts are transferred to the unit document control officer (DCO) at the completion of the mission **(T-3)**.

5.17.3. Charges incurred for other services, including landing fees, aircraft de-icing, follow-me trucks, and other airfield related services might not generate a receipt that is given to the aircrew. If no receipt for the services is generated and provided to the aircrew, the AC will ensure the location and services performed are noted (AF Form 664 meets this requirement) and relayed to the unit DCO when the receipts are turned in upon mission completion **(T-3)**. If a separate receipt is generated, turn it in to the unit DCO **(T-3).**

5.17.4. In the event the AIR Card is not accepted aircrew will use the Standard Form 44 (SF44) for payment purposes **(T-3)**. The aircrew shall complete the SF44 and attach it to the merchant vendor ticket/invoice when the merchant also declines use of the SF44 and uses its own invoice/receipt **(T-3)**. Fuel purchases shall be documented on a separate SF44 from ground services and other authorized products, since the merchant must invoice Defense Energy Support Center for the fuel portion of the invoice and the customer home station payment office for any non-fuel product and services **(T-3)**.

**5.18. Minor Maintenance Actions.** When authorized by the terms of the performance work statement in the maintenance contract, MAJCOMs may train and certify flight engineers in minor maintenance actions using an approved syllabus. After certification, flight engineers are authorized to remove access panels, remove, inspect, and install chip detectors, reset cannon plugs,

reset circuit breakers/voltage regulators, and service fluid levels when away from home station to allow continued mission execution or return flight for maintenance actions **(T-3)**.

5.18.1. ACs will inspect minor maintenance action performed by certified flight engineers and sign off red-X prior to flight (T-3).

5.18.2. Certified flight engineers will have a tool kit on board for all flights departing the local traffic pattern **(T-3)**. Individual units will establish requirements for tools/parts to be included in these kits **(T-3)**. As a minimum, the kit will include enough tools to remove and install chip detectors. Supplement accountability procedures per MAJCOM guidance **(T-2**).

**5.19. Cabin Security.** During preflight inspections, pay particular attention to panels and components that are potential dropped objects. Air crew must secure all cargo/mission equipment inside the aircraft prior to any aircraft movement **(T-3)**. **WARNING:** Loose objects can become hazardous projectiles during any violent maneuver or hard landing and must be secured to prevent injury to personnel and/or damage to the aircraft. **(T-2)**.

**5.20. Standard Configurations.** Standard configurations will be IAW MAJCOM and unit local procedures (supplement or operating instruction) **(T-2)**. Each flying unit will publish diagrams and mission equipment lists for each configuration used by the unit **(T-2)**. Prepare a DD Form 365-4 IAW **paragraph 4.9** for each of these configurations **(T-3)**. Additional special mission equipment may be added at the option of the unit commander. All equipment authorized for and installed on the aircraft will be categorized and managed IAW applicable Air Force instructions **(T-2)**. Aircraft will not be modified to secure and/or install equipment unless authorized by aircraft technical orders or applicable Air Force instructions **(T-2)**.

5.20.1. Cargo/Equipment. Securing life support/medical equipment/medical kits with seat belts is authorized. In addition, items weighing less than 200 pounds that require constant access, such as navigation or mission kits, may be secured with seat belts. Secure cargo/equipment items not requiring rapid removal during an aircraft or medical emergency with devices identified in T.O. 13C2-1, *Cargo Tie-Down Equipment*, and the flight manual. Do not modify tie down devices in any fashion.

5.20.2. Deployment/Exercise Configuration. Every effort will be made to establish the standard configuration(s) prior to deployment/exercise participation **(T-3)**. In lieu of an exercise coordinator, the Mission Commander will establish the standard configuration for each planned mission **(T-3)**. The configuration(s) may be altered to carry additional observers, ferry simulated survivors, etc. Survival equipment required by MAJCOM or multi-command guidance will be included in these configurations **(T-3)**.

5.20.3. Deviations. Unit commanders may authorize deviations from the standard configuration. Deviations from tactical configuration requirements are authorized at deployment locations (including exercises) when the mission dictates.

5.20.4. FCF Configuration. Unit commanders may establish standard FCF configurations as required.

5.20.5. Discrepancies. Document all standard configuration discrepancies using the AFTO Form 781A **(T-3)**.

**5.21. Alternate Insertion/Extraction Operations (AIE).** Reference AFTTP 3-3.H-1 for additional information. **WARNING:** For all AIE operations, it is the AC's responsibility to ensure

all crewmembers are aware of the length of the rope(s). Failure to do so may result in serious injury to deploying personnel and/or damage to the aircraft. **WARNING:** Devices used for non-live AIE training will be clearly distinguishable from operational equipment **(T-2)**. Training devices will be configured the same as operational equipment **(T-2)**. Only operational equipment will be used for live AIE operations **(T-2)**. **WARNING:** UH-1N crews will not use the rope ladder for emergency extraction of personnel unless the threat to personnel remaining on the ground is higher than the risk associated with the in-flight rope ladder failure **(T-2)**. If used in forward flight, altitude will be the absolute minimum required, airspeed will not exceed 30 knots indicated airspeed (KIAS), and crews will continually assess the risk and the possibility for rope ladder failure **(T-2)**.

5.21.1. Live Hoist Training. Accomplish live hoist training at the minimum altitude required to accomplish desired training, but in no case higher than 40 feet AGL **(T-3)**. Live hoist operations may be performed at higher altitudes with Squadron Commander (Sq/CC) or DO approval when conducting a search and rescue exercise **(T-3)**.

5.21.1.1. Hoist Hook Safety/ Retaining Pin Procedures. To prevent dropping the rescue device, use the hoist hook safety/retaining pin for all ground recoveries **(T-3)**. When raising or lowering an empty stokes litter or rescue strop, the use of the hoist hook safety/retaining pin is not required. This allows easier removal of litter cables, or attachment of one/both sides of the rescue strop when used, from the hoist hook. Ensure the hoist hook safety/retaining pin is installed prior to hoisting the litter, or strop, with a survivor **(T-3)**.

5.21.1.2. Unit commanders or DOs must approve hoist riders for training **(T-3)**. Any military member or DoD civilian may serve in a survivor role and ride the hoist. Personnel not familiar with AIE operations will complete familiarization training with a flight engineer prior to flight or require a qualified observer on the ground during hoist operations **(T-2)**. This requirement may be met by lowering a qualified crewmember to the ground to assist the survivor/personnel not familiar with AIE operations **(T-3)**.

5.21.1.3. Hoist Exercise Procedures. Exercises are distinct from currency training. Exercises are designed to add elements of realism not normally provided during currency training. The following are special provisions for exercises:

5.21.1.3.1. Select a clear recovery area to enhance speed and safety and to allow the helicopter to land or use the extraction device from as low a hover altitude as possible and/or practical. If a recovery is to be accomplished from a forested area, the foliage must be sparse enough to ensure the survivor will not be dragged through the branches **(T-2)**. When practical, select areas with trees of a minimum height to decrease recovery time and provide additional safety for the survivor in the event of a hoist or other equipment malfunction.

5.21.1.3.2. Other exercise personnel. The AC will make every practical effort to recover other exercise personnel by landing **(T-2)**. They may be recovered by hoist if the remaining range time prevents movement of these personnel to a suitable landing area, or when an extended period of time is required to reach a suitable landing area. The AC will ensure these personnel are briefed to select an area within a reasonable distance that will allow the helicopter to hover as low as practical **(T-2)**.

5.21.2. Rope Ladder Operations. The maximum number of personnel on the ladder at any one time is three.

5.21.3. AIE Storage and Maintenance. Units will develop a program to ensure all unit-owned equipment is tracked, maintained and serviceable **(T-2)**. As a minimum units must ensure compliance with current manufacturer procedures **(T-2)**. Units will document these procedures per MAJCOM guidance **(T-2)**.

**5.22. Weapons Employment.** Units will ensure that weapon systems employment procedures and training standards are included in the unit weapons and tactics training program **(T-2)**. Refer to AFI 11-214, *Air Operations Rules and Procedures,* AFTTP 3-3.H-1, and local range procedures/restrictions for guidance. Units will ensure that detailed local weapons procedures are documented per MAJCOM guidance **(T-2)**.

**5.23. Armed Crewmembers.** Squadron commanders may direct arming of crewmembers as deemed necessary by mission threat analysis. During all operations with an aircraft weapon system on board, an aircrew member will be armed **(T-2)**. Protect these weapons, and other installed weapons, in compliance with AFI 31-117, *Arming and Use of Force by Air Force Personnel,* and AFI 31-101, *Integrated Defense (ID)*. If a crewmember is armed for the sole purpose of providing security for an aircraft weapon system, they must be armed with any approved Air Force sidearm **(T-2)**.

**5.24. Armed Passengers.** The AC is the final approving authority for armed passengers. At the discretion of the AC, a crewmember may collect, secure, and transport weapons for passengers who are authorized to carry them.

**5.25. Aircraft Lighting.** Aircraft lighting will be IAW AFI 11-202V3.

**5.26. Aircraft Lighting for NVG Operations.**

5.26.1. An operable white light (landing or search) is required for all NVG flights **(T-2)**.

5.26.2. Position lights will be set to steady/bright for NVG flights **(T-2)**.

5.26.3. Use of one anti-collision light is permitted. The anti-collision light(s) may be extinguished and the position lights set to dim, if it creates a hazard to the aircrew IAW AFI 11-202V3.

5.26.4. An operable searchlight equipped with an infrared filter is required for NVG flights when effective illumination (regardless of methodology or measurement) is below 20 percent and is highly recommended for all NVG flights.

5.26.5. During NVG formation operations in aircraft that have not undergone the night vision imaging system modification, pull the NAV LTS and FUS LTS circuit breakers and apply tape over the tail lights as necessary.

5.26.6. Interior Lighting/Configuration.

5.26.6.1. For aircraft not modified with TCTO 1H-1(U)N-738, *Modification of the NVG Interior Cockpit and Exterior Lighting on UH-1N Helicopters*, the only NVG cockpit modifications currently approved for use on UH-1N helicopters are: blue-filtered secondary instrument lights, NVG compatible master caution segment panel, NVG compatible peanut lights, NVG compatible flip filters for the master caution and revolutions per minute (RPM) warning lights, NVG compatible filters on the overhead

pilot and copilot map lights, NVG compatible bulb replacements for the fire pull handle lights, an NVG compatible filter that can be temporarily mounted over the master caution segment light panel, the chip detector caution panel, the fuel system caution panel, gooseneck lights (National Stock Number 1680-01-230-0533) and any permanent/temporary modification that has been approved in writing by the UH-1N system program office. At a minimum, all helicopters will be equipped with the blue filtered secondary instrument lights **(T-2)**.

5.26.6.2. Aircrew should tape all lights that are not NVG compatible. Ensure critical information is not rendered invisible by excessive taping. The tape must allow enough light to be emitted to alert the pilot of critical information. **NOTE:** Use of lip or finger lights to illuminate gauges in lieu of secondary lights is not authorized.

5.26.7. Over Water Flights. All cockpit and cabin emergency exits will be marked by chemical lights, which will be activated prior to flight over water **(T-2)**. The chemical lights will be placed inside the cockpit and cabin compartment as follows: **(T-2)**.

5.26.7.1. Center one light immediately above each cockpit and cabin door (**T-2).**

5.26.7.2. Attach one light to each cabin window emergency release handle (when doors are closed) **(T-2).**

5.26.7.3. Attach one light to the handle of each cockpit door and cargo door (when doors are closed).

5.26.7.4. Attach one light to the life raft **(T-2).**

**5.27. Maintenance Debriefing.** The AC or representative will debrief maintenance personnel on the condition of the aircraft and equipment following flight **(T-2)**. The AC will make the following entries in the AFTO Form 781A, when appropriate:

5.27.1. Aircraft subject to salt spray when flown below 3,000 feet over salt water **(T-2)**.

5.27.2. Aircraft flown below 30 feet above salt water **(T-2)**.

5.27.3. Hoist and rescue device used. Specify the length of cable used, the particular device used, and if they were used in salt water **(T-2)**.

5.27.4. Aircraft flown through volcanic ash **(T-2)**.

# Chapter 6

## TRANSITION AND EMERGENCY PROCEDURES TRAINING

**6.1. Prohibited Training Maneuvers.** In addition to T.O. 1H-1(U)N-1 restrictions, aircrew will not intentionally accomplish the following maneuvers in the aircraft: **(T-2)**.

6.1.1. Actual in-flight engine shutdown **(T-2)**.

6.1.2. Blade stall, vortex ring state, and power settling **(T-2)**.

6.1.3. Dual fuel control failures **(T-2)**.

6.1.4. Dual hydraulic system failures **(T-2)**.

6.1.5. Dual engine forced landing (i.e., the surprise approach to conditions leading to an autorotation by intentionally rolling both throttles to flight idle unannounced) **(T-2)**.

6.1.6. Hovering autorotation **(T-2)**.

6.1.7. Touchdown autorotations **(T-2)**.

**6.2. Training Requirements.**

6.2.1. Special Restrictions. Unusual attitude training and emergency procedure training involving engines (to include simulated autorotations), engine fuel systems, or hydraulic systems will be accomplished only: **(T-2)**.

6.2.1.1. During visual meteorological conditions **(T-2)**.

6.2.1.2. After official sunrise/prior to official sunset (extended daylight hours may be authorized by MAJCOM). Night Emergency Procedures may be authorized by MAJCOMS and procedures will be addressed in MAJCOM Supplements **(T-2)**.

6.2.1.2. **(PACAF)** 459 AS is not authorized to conduct night emergency procedures training.

6.2.1.3. During training, currency, or evaluation flights **(T-2)**.

6.2.1.4. When passengers are not on board **(T-2)**.

6.2.1.5. When an instructor pilot (IP)/flight evaluator pilot (EP) is designated on the flight orders under duty position as IP or EP and occupies a pilot seat with a set of controls **(T-2)**.

6.2.2. Unusual Attitude Training. Entry must be at or above 1,000 feet AGL **(T-2)**. Simulated unusual attitude training will not exceed 30 degrees of bank, a 20 degrees nose high attitude, or 10 degrees nose low attitude **(T-2)**.

**6.3. Slide Landing Training Areas.** Local slide landing training areas are used for emergency and normal procedure maneuvers (e.g., single engine). Minimum dimensions will be IAW UFC 3-260-01, *Airfield and Heliport Planning and Design* **(T-2)**.

6.3.1. The AC will accomplish the following **(T-2)**:

6.3.1.1. Brief the hazards of the slide landing area prior to commencing any maneuvers **(T-2)**.

6.3.1.2. Visually inspect the slide area for hazards and surface condition (N/A for active runways and active taxiways at airports with an active control tower) **(T-2)**.

6.3.1.3. If the visual inspection was inconclusive, test the surface prior to commencing emergency procedures by accomplishing a slide landing. Accomplish a slide landing with both throttles at full open to determine its slide characteristics **(T-2)**.

6.3.1.4. If the slide area is not safe, discontinue training or go to a suitable slide or hard surface area **(T-2)**.

6.3.1.5. Hard surface areas such as runways, taxiways, or ramp areas may be used if free of obstacles/hazards **(T-2)**.

**6.4. Airport Rescue and Fire Fighting (ARFF).** Units will establish procedures to ensure ARFF support is readily available during emergency procedure training **(T-2)**. Aircrews will not accomplish simulated emergency procedures while operating at civil airfields unless authorized in a letter of agreement **(T-2)**.

**6.5. Maneuver Parameters.**

6.5.1. Traffic Pattern. If a rectangular pattern is flown, aircrew should fly the downwind leg at 500 feet AGL and 90 KIAS. During the turn to base, aircrew will descend to 300 feet AGL and slow the aircraft to 70 KIAS **(T-3)**. These altitudes will be used whenever possible if local conditions permit, otherwise comply with appropriate local traffic patterns **(T-3)**.

6.5.2. Normal Takeoff. The pilot flying will initiate from the ground or hover using 5-foot hover power plus 10 percent **(T-3)**. The pilot flying will terminate the maneuver when reaching minimum safe single engine airspeed (or 70 KIAS if safe single engine airspeed is not available or as directed by the AC) **(T-3)**. **NOTE**: A normal takeoff should minimize time in the AVOID area of the height-velocity diagram.

6.5.3. Marginal Power Takeoff. The pilot flying will initiate from the ground or hover using 5-foot hover power **(T-3)**. Simulate a 50-foot obstacle **(T-3).** The pilot flying will terminate the maneuver when clear of the simulated obstacle and above minimum safe single engine airspeed (or 70 KIAS if safe single engine airspeed is not available or as directed by the AC) **(T-3)**.

6.5.4. Maximum Performance Takeoff. The pilot flying will initiate from the ground or 5-foot hover using 5-foot hover power plus 10 to 15 percent or as specified by the IP/EP **(T-3)**. Simulate a 100-foot obstacle **(T-3)**. The pilot flying will terminate the maneuver when clear of the simulated obstacle and above minimum safe single engine airspeed (or 70 KIAS if safe single engine airspeed is not available or as directed by the AC) **(T-3)**.

6.5.5. Slide Takeoff. The pilot flying will initiate from the ground using approximately 5-foot hover power minus 5 percent **(T-3)**. The pilot flying will terminate the maneuver when at minimum safe single engine airspeed (or 70 KIAS if safe single engine airspeed is not available) **(T-3)**.

6.5.6. Normal Approach. The pilot flying will initiate the approach from approximately 300 feet AGL and 70 KIAS using a 30 degrees apparent angle **(T-3)**. The pilot flying will terminate the approach at a touchdown or 5-foot hover **(T-3)**.

6.5.7. Steep Approach. The pilot flying will initiate the approach from approximately 300 feet AGL and an apparent 30 Knots Ground Speed (KGS) using a 45 degrees apparent angle **(T-3)**. The pilot flying will terminate the approach at a touchdown or 5-foot hover **(T-3)**. **WARNING**: During approaches at less than 40 KIAS, do not exceed 800 feet per minute descent rate. If descent rate exceeds 800 feet per minute at less than 40 KIAS, aircrew will execute a "go-around." **(T-2)**.

6.5.8. Shallow Approach. The pilot flying will initiate the approach from approximately 300 feet AGL and 70 KIAS using a 10 degrees apparent angle **(T-3)**. The pilot flying will terminate approach at a touchdown or 5-foot hover **(T-3)**.

## 6.6. Emergency Procedures Training.

6.6.1. Manual Fuel Operations. The IP may simulate fuel control malfunction indications at any time. If aircrew accomplish the Fuel Control System Actuation Checklist in flight, the aircraft must be at a minimum of 500 feet AGL and 70 KIAS before initiating step 1 of the checklist **(T-3)**. The pilot flying will ensure collective setting is below computed single-engine torque available prior to retarding the throttle to flight idle **(T-3)**. The pilot flying will maintain torque on the manually governed engine approximately 5 to 10 percent below the governed engine, but it may be less than 5% under high density altitude conditions **(T-3)**.

6.6.2. Single Hydraulic System Failure Operations. Aircrew may enter the maneuver on the ground or in the air. If in the air, aircrew will be at a minimum altitude of 500 feet AGL and 70 KIAS and in straight-and-level flight prior to moving the hydraulic selector switch **(T-3)**.

6.6.3. Simulated Single-Engine Emergencies. Aircrew will not reduce a throttle to initiate practice single-engine emergencies lower than 150 feet AGL and 55 KIAS **(T-3)**. **NOTE**: Practice single-engine emergencies may be initiated below the above listed altitude as long as throttles are left at full open and torque available is limited on both engines versus reducing the throttle on the simulated failed engine. Aircrew will not reduce a throttle on the simulated failed engine unless indicated dual torque is below single-engine torque available **(T-3)**. If unsafe conditions exist, aircrew will use both engines for the go-around or landing, as required **(T-3)**.

6.6.3.1. Aircrew will practice single-engine approaches and landings to a unit approved slide area or hard surface landing area **(T-3)**. The pilot flying will identify a go/no-go point for the approach **(T-3)**.

6.6.3.2. Aircrew will perform a single engine power-available check prior to beginning the approach if the simulated single-engine landing will be performed with one engine at flight idle **(T-3)**.

## 6.7. Practice Autorotations.

6.7.1. Aircrew will terminate autorotations and initiate a power recovery at the first indication of abnormally high/low rotor RPM, excessive sink rate, low airspeed, ineffective flare, or at any time an inadvertent touchdown might occur **(T-2)**.

6.7.2. Aircrew will enter straight ahead and 90-degree autorotations at least 500 feet AGL and 60-100 KIAS **(T-2)**. Aircrew will enter autorotations of 180-degrees or greater at least 800 feet AGL and 60-100 KIAS **(T-2)**.

6.7.3. Aircrew will terminate practice autorotations of 180 degrees or less to a power recovery no lower than 5 feet AGL with a maximum ground speed of 15 knots **(T-3)**. Aircrew will terminate practice autorotations in excess of 180 degrees to a power recovery no lower than 500 feet AGL **(T-2)**.

6.7.4. For the first autorotation during training and currency sorties, the instructor or evaluator pilot will fly a straight-ahead autorotation to evaluate aircraft performance **(T-2)**. During instructor upgrades, the instructor pilot candidate may perform this autorotation.

6.7.5. When performing any autorotation, prior to descending below 150 feet AGL, aircrew must maneuver the aircraft to wings level, have a minimum of 60 KIAS, have rotor RPM within limits, and be aligned within 30 degrees of the landing/recovery heading **(T-2**). The pilot flying will initiate the flare at approximately 100 to 75 feet AGL with a minimum of 60 KIAS **(T-2)**. If any of these conditions are not met, aircrew will initiate a power recovery immediately **(T-2)**. The wings level requirement does not prohibit minor heading corrections on final.

6.7.6. Wind Requirements. When steady-state winds are less than 15 knots, aircrew will align the aircraft landing within 90 degrees of the wind direction; if steady-state winds are 15 knots or greater, aircrew will align the aircraft landing heading within 45 degrees of the wind direction **(T-2)**.

# Chapter 7

## INSTRUMENT PROCEDURES

**7.1. Climbout/Descent.** The pilot not flying will make the following calls during instrument climb out/descent: **(T-3)**.

7.1.1. "500 feet below/above" assigned altitude and "100 feet below/above" assigned altitude **(T-3)**.

7.1.2. "500 feet above/below" initial approach fix altitude, step down fix altitude, or holding altitude **(T-3)**.

7.1.3. "100 feet above/below" initial approach fix altitude, step down fix altitude, or holding altitude **(T-3)**.

**7.2. Deviations.** Any crewmember seeing deviations greater than 10 degrees of heading, 10 knots of airspeed, or 100 feet of altitude will inform the pilot flying **(T-3)**. Deviations from prescribed procedures for the approach being flown will also be announced **(T-3)**.

**7.3. Non-Precision Approaches.** The pilot not flying will make the following calls during non-precision approaches:

7.3.1. "100 feet above MDA" (Minimum Descent Altitude) **(T-3)**.

7.3.2. "Minimums" at MDA **(T-3)**.

7.3.3. "Runway in sight." Call when the runway environment is in sight. Do not call too soon when obstructions to vision (such as fog, haze, low stratus clouds, and other obscurations) are present **(T-3)**.

7.3.4. "Go-around." Call at missed approach point if the runway environment is not in sight or at any time the aircraft is not in a safe position to land **(T-3)**.

**7.4. Precision Approaches.** The pilot not flying will make the following calls during precision approaches:

7.4.1. "100 feet above Decision Altitude" (DA) **(T-3)**.

7.4.2. "Continue." Call at DA if only the approach lights can be seen, indicating that the pilot may continue descent to 100 feet above threshold elevation (THRE) or touchdown zone elevation (TDZE) using the approach lights as a reference **(T-3)**.

7.4.3. "Land." Call at DA if sufficient visual reference with the runway environment has been established and the aircraft is in position to execute a safe landing **(T-3)**. If the term "Continue" was used as in **paragraph 7.4.2**, call "Land" at 100 feet above THRE or TDZE when the red termination bars or the red side row bars are visible and identifiable and the aircraft is in a safe position to land **(T-3)**.

7.4.4. "Go-around." Call at DA if the runway environment is not in sight or at any time the aircraft is not in a safe position to land **(T-3)**. If the term "Continue" was used as in **paragraph 7.4.2**, call "Go-around" at 100 feet above THRE or TDZE when the red termination bars or the red side row bars are not visible and identifiable or if the aircraft is not in a safe position to land **(T-3)**.

# Chapter 8

# MISSION EVENTS

## *Section 8A—Non-surveyed/Unprepared Landing Areas*

**8.1. Non-surveyed/Unprepared Landing Area Procedures.** Operations will be IAW the procedures for helicopter landing areas in AFI 11-202V3 **(T-2)**. For all tactical and non-tactical operations to non-surveyed/unprepared or unfamiliar landing areas, aircrews must analyze winds, power margin, hazards, and approach and departure plan **(T-2)**. Only one site analysis is required during successive approaches when conditions are equal to or better than previous approaches to the same area.

**8.2. High and Low Reconnaissance.**

8.2.1. Aircrew will conduct a high and low reconnaissance for all operations to non-surveyed/unprepared landing area other than: **(T-3)**.

8.2.1.1. Conducting tactical approaches **(T-3**).

8.2.1.2. During a mission where, in the judgment of the AC, the accomplishment of the high and low reconnaissance would degrade or dangerously delay mission accomplishment **(T-3)**.

8.2.1.3. Operational Sites. **(T-3)**. OG/CCs will define what constitutes an operational site and requirements in a local instruction.

8.2.2. Aircrew will overfly the landing area and begin the high reconnaissance at a minimum of 300 feet above landing site **(T-3)**. Aircrew may descend no lower than 100 feet above highest obstacle (AHO) after the initial overflight if necessary to analyze elements affecting the landing zone (LZ) (winds, terrain, etc). To the maximum extent possible for the high recon, aircrew should maintain above minimum safe single engine airspeed. If safe single engine airspeed is not available, to the maximum extent possible aircrew should maintain at or above minimum rate of descent airspeed. If flying below minimum safe single engine airspeed, or if single engine airspeed is unavailable, the AC will ensure a viable escape route is briefed **(T-3)**.

8.2.3. Aircrew will accomplish a low reconnaissance at a minimum of 50 feet AHO along the flight path **(T-3)**. Aircrew will maintain at/or above effective translational lift **(T-3)**. At the pilot's discretion, the low reconnaissance may be performed on final approach if OGE power is available.

## *Section 8B—Low-Level Operations/Tactical Procedures*

**8.3. General.** Tactical operations may consist of low-level flight, normal flight, or a combination of both. Minimum enroute altitude will be at or above 50 feet AHO or as directed by MAJCOM **(T-2)**.

**8.4. Evasive Maneuver Training.** Aircrew will maintain 100 feet AHO during en route evasive maneuver training **(T-3)**. Pilots will make crew advisory calls prior to turns and will clear their flight path throughout maneuvering **(T-3)**. If hovering, this does not preclude turning the tail of the helicopter to mitigate the threat or minor heading changes during takeoff.

***Section 8C—Formation Procedures***

**8.5. Formation Types/Maneuvers.** A description of formation types and maneuvers is listed in AFTTP 3-3.H-1.

8.5.1. Safety Considerations. Perform “Knock-It-Off” and “Terminate” calls IAW AFI 11-214.

8.5.2. Formation Spacing Requirements.

8.5.2.1. The minimum distance between aircraft in flight is one rotor diameter.

8.5.2.2. The minimum distance between aircraft taxiing is two rotor diameters.

8.5.2.3. Rejoins may be straight ahead or turning. Maximum bank angle for turning rejoins is 20 degrees.

**8.6. Dissimilar Formation.** Formation flights with dissimilar aircraft are authorized when all participating crewmembers are briefed and are thoroughly familiar with the other aircraft’s performance and tactics. Rotor disk separation will be based on the largest rotor disk diameter **(T-3)**.

**8.7. Blind Procedures.** Use the following procedures when one or more flight members/elements lose visual contact within the formation in VMC:

8.7.1. Two conditions may result in the formation losing visual contact:

8.7.1.1. An anticipated blind is when terrain/environmental factors cause a loss of visual cues for a short duration or when visual cues are lost when using pre-coordinated non-visual station keeping that provides sufficient SA to ensure de-confliction. Examples: Holding one aircraft in terrain while the other unmasks for line of sight to the objective; crews see terrain that will briefly come between the formation; using non-visual means to maintain aircraft separation (i.e., Air-to-air tactical air navigation [A/A TACAN]).

8.7.1.2. An unanticipated blind situation is when visual cues are the sole references used for formation separation and these cues no longer provide sufficient distance, aspect or closure rate cues to ensure de-confliction, or when non-visual methods do not provide sufficient SA to ensure positive de-confliction. Examples: The wingman loses lead in ground lights or while maneuvering independently such as during evasive maneuvering.

8.7.2. Anticipated Blind Procedures:

8.7.2.1. If anticipated blind occurs, any flight member/element calls "Blind with SA." Then the other flight member/element will immediately acknowledge with "Visual" and an informative position call or acknowledge with “Blind.” **(T-3)**.

8.7.2.2. Flight lead will direct the prebriefed de-confliction plan **(T-3)**.

8.7.3. Unanticipated Blind Procedures:

8.7.3.1. If any flight member/element calls "Blind," then the other flight member/element will immediately acknowledge with "Visual" and an informative position call or acknowledge with “Blind.” **(T-3)**.

8.7.3.2. If the other flight member/element is also "Blind", then the flight lead will take action to ensure separation between flight members/elements **(T-3).** When unable to

ensure separation using non-visual means, flight lead will direct an altitude separation of at least 200 feet **(T-3)**. The flight lead will specify either AGL or mean sea level when directing the formation to de-conflict with altitude **(T-3)**. Climbs/descents through the de-confliction altitude should be avoided if possible.

8.7.3.3. If there is no timely acknowledgment of the original "Blind" call, then the flight member/element initiating the call will maneuver away from the last known position of the other flight member/element and alter altitude if unable to ensure aircraft separation by non-visual means **(T-3)**.

8.7.3.4. If visual contact is not regained, the flight lead will take additional positive action to ensure flight path de-confliction within the flight to include a "Knock-It-Off" if necessary **(T-3)**. Scenario restrictions such as sanctuary altitudes and/or adversary blocks must be considered **(T-3)**.

**8.8. Lost Wingman Procedures.** When a wingman goes inadvertent IMC and loses sight of the preceding aircraft, all members of the formation must react quickly and precisely to prevent a midair collision **(T-3)**. In such a case, the aircraft losing visual contact will call, "Formation Call Sign, Position, Lost Wingman." **(T-3)**. Formation lead will immediately initiate the breakup by announcing "Formation Call Sign, Execute," the type of breakup (i.e., mountainous or non-mountainous) unless prebriefed, base "heading" (magnetic), base "airspeed", and base "Minimum Safe Altitude" (MSA) **(T-3)**. Formation lead will maintain base parameters and all wingmen will take action based on the base heading, airspeed and MSA **(T-3)**. Wingmen will acknowledge lead's call. Once the formation executes the IMC breakup, lead will announce or brief any changes to magnetic headings, airspeed, and MSA **(T-3)**.

8.8.1. If a wingman calls lost wingman and lead is still VMC and able to ensure terrain/obstacle clearance, lead should stay VMC. Formation lead must still make heading, airspeed, and MSA calls for the wingman executing the lost wingman procedure **(T-3)**.

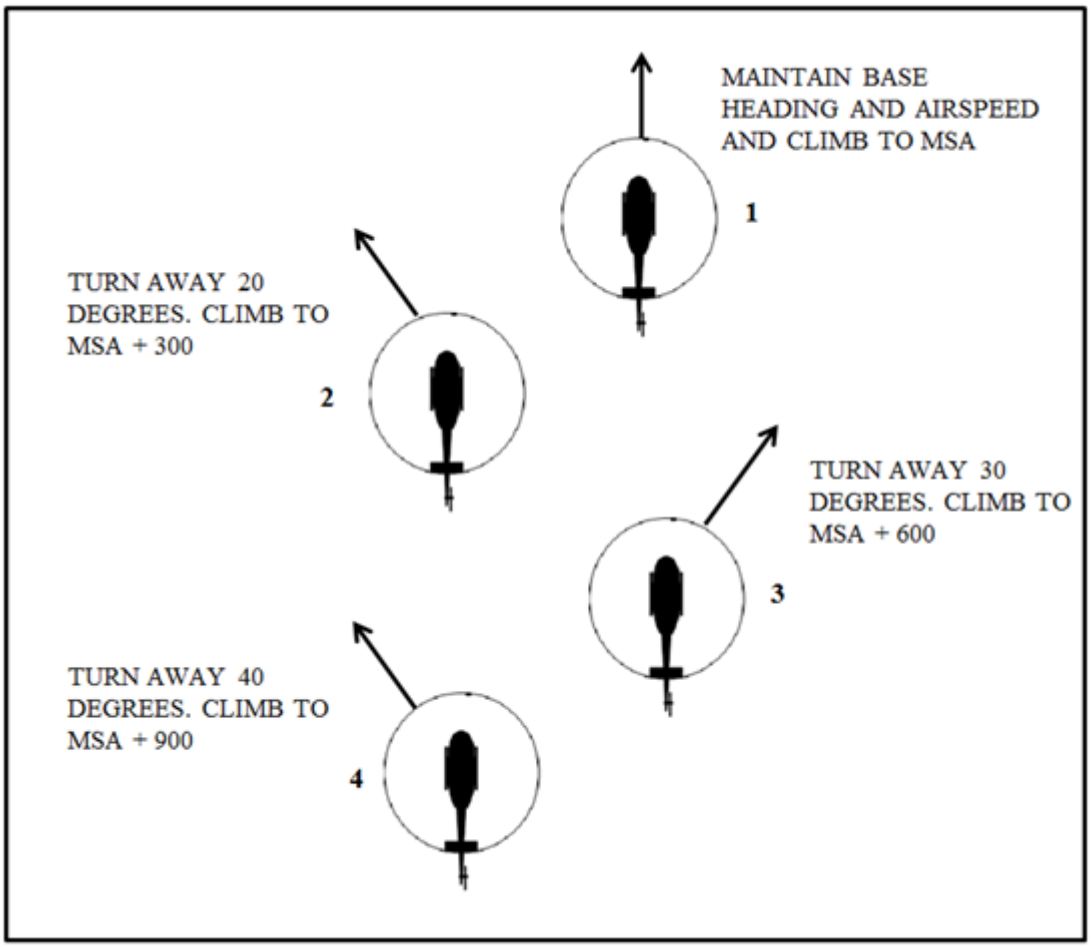
8.8.2. If another aircraft in the formation calls lost wingman and you still have sight of the preceding aircraft, maintain formation position on that aircraft. If you then lose sight of the preceding aircraft, execute lost wingman procedures for your original position in the formation.

8.8.3. Non-Mountainous Procedures. The following lost wingman procedures are for non-mountainous operations (**Figure 8.1**).

8.8.3.1. Formation lead maintains base heading (usually straight-ahead), airspeed, and climbs to MSA.

8.8.3.2. Wingmen turn away from the preceding aircraft and climb according to the following procedure: Chalk 2 will turn 20 degrees and climb to MSA plus 300, Chalk 3 will turn 30 degrees climb to MSA plus 600 feet, Chalk 4 will turn 40 degrees and climb to MSA plus 900 feet, etc. **(T-3)**. Timing for all wingmen is 30 seconds and starts once reaching required altitude. At the end of timing, all aircraft return to the announced heading.

**Figure 8.1. Non-Mountainous Procedures.**




8.8.4. Mountainous Procedures. The following lost wingman procedures are for mountainous operations (**Figure 8.2**).

8.8.4.1. Formation lead will maintain announced base airspeed or higher and climb to MSA **(T-3)**. If possible, lead should accelerate to allow the formation more maneuvering room and to avoid excessively slow airspeeds for wingmen.

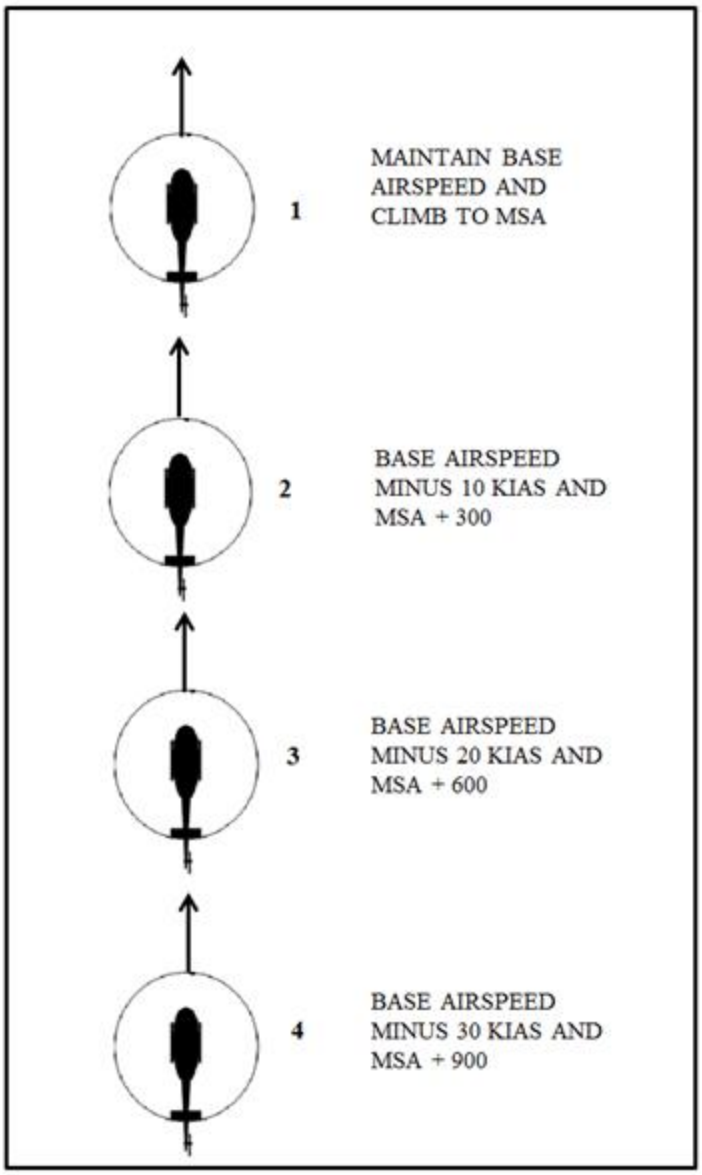
8.8.4.2. Aircraft number two will adjust to maintain announced airspeed minus 10 knots, and climb 300 feet above MSA **(T-3)**.

8.8.4.3. Aircraft number three will adjust to maintain announced airspeed minus 20 knots, and climb 600 feet above MSA **(T-3)**.

8.8.4.4. Aircraft number four will adjust to maintain announced airspeed minus 30 knots, and climb 900 feet above MSA **(T-3)**.

8.8.4.5. As each aircraft reaches its assigned altitude, maintain heading and assigned airspeed for 3 minutes, then accelerate to the base airspeed.

**Figure 8.2. Mountainous Procedures.**

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## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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***Abbreviations and Acronyms***

**A/A**—Air-to-Air

**AC**—Aircraft Commander

**ADI**—Attitude Direction Indicator

**AFDW**—Air Force District of Washington

**AFGSC**—Air Force Global Strike Command

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFRCC**—Air Force Rescue Coordination Center

**AFTTP**—Air Force Tactics, Techniques, and Procedures

**AGL**—Above Ground Level

**AHO**—Above Highest Obstacle

**AIE**—Alternate Insertion or Extraction

**AIR**—Aviation Into-Plane Reimbursement

**ARFF**—Airport Rescue and Fire Fighting

**AWBS**—Automated Weight and Balance System

**AWL**—Above Water Level

**CC**—Commander

**CG**—Center of Gravity

**CHUM**—Chart Update Manual

**DA**—Decision Altitude

**DCO**—Document Control Officer

**DMS**—Direct Mission Support

**DO**—Director of Operations

**DoD**—Department of Defense

**EFB**—Electronic Flight Bag

**EP**—Evaluator Pilot

**FAA**—Federal Aviation Administration

**FBO**—Fixed Base Operator

**FCF**—Functional Check Flight

**FL**—Flight Lead

**FLIP**—Flight Information Publications

**FLIR**—Forward Looking Infrared

**GPS**—Global Positioning System

**HEED**—Helicopter Emergency Egress Device

**HTAWS/TCAD**—Helicopter Terrain Awareness Warning System/Traffic Collision Avoidance Device

**IAW**—In Accordance With

**ICS**—Intercom Communication System

**IFR**—Instrument Flight Rules

**IMC**—Instrument Meteorological Conditions

**IP**—Instructor Pilot

**IPE**—Individual Protective Equipment

**KGS**—Knots Ground Speed

**KIAS**—Knots Indicated Airspeed

**LOA**—Letter of Agreement

**LPU**—Life Preserver Unit

**LZ**—Landing Zone

**MAJCOM**—Major Command

**MDA**—Minimum Descent Altitude

**MEA**—Minimum Enroute Altitude

**MEDEVAC**—Medical Evacuation

**MSA**—Minimum Safe Altitude

**MEP**—Mission Essential Personnel

**MOCA**—Minimum Obstruction Clearance Altitude

**MXG**—Maintenance Group

**NACO**—National Aeronautical Charting Office

**NAF**—Numbered Air Force

**NM**—Nautical Miles

**Nr**—Rotor Speed

**NVG**—Night Vision Goggles

**OG**—Operations Group

**OGE**—Out of Ground Effect

**OPR**—Office of Primary Responsibility

**ORM**—Operational Risk Management

**OSF**—Operational Support Flyer

**PA**—Pressure Altitude

**RNAV**—Area Navigation

**RPM**—Revolutions Per Minute

**RVR**—Runway Visual Range

**SA**—Situational Awareness

**SAR**—Search And Rescue

**SF**—Standard Form

**SPO**—System Program Office

**TACAN**—Tactical Air Navigation

**TCTO**—Time Change Technical Order

**TDZE**—Touchdown Zone Elevation

**THRE**—Threshold Elevation

**T.O.**—Technical Order

**TOLD**—Takeoff and Landing Data

**VFR**—Visual Flight Rules

**VMC**—Visual Meteorological Conditions

**WG**—Wing

***Terms***

**May**—indicates an acceptable or suggested means of accomplishment.

**NOTE**—An operating procedure, technique, etc., which is considered essential to emphasize.

**Shall**—indicates a mandatory requirement.

**Should**—indicates non-mandatory recommended method of accomplishment.

**WARNING**—Operating procedures, techniques, etc., which may result in personal injury or loss of life if not carefully followed.

**Will**—indicates a mandatory requirement.

## Attachment 2

## EXAMPLE AUTHORIZATION TO REMOVE HUMAN REMAINS

**Figure A2.1. Example Authorization To Remove Human Remains.**

Example Authorization to Remove Human Remains

1. I ***(name)*** under the authority granted me as ***(position),*** of ***(jurisdiction where position held),*** hereby authorize this ***(xx)*** day of ***(month), (year)*** or hereby did authorize the ***(xx)*** day of ***(month), (year)***, the United States Government to remove any and all human remains located near ***(location)*** and certify I have provided or did provide these representatives with any necessary directions for the proper removal and handling of human remains under the applicable laws and regulations of this jurisdiction.

_____

(Signature)

_____

(Printed Name)

_____

(Date)

2. Verbal permission received per telecom on ***(date)*** by ***(name and position)*** for SAR mission ***(number).***