

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

**AIR FORCE MANUAL 11-2HH-60G,
Volume 3**



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Flying Operations

HH-60G - OPERATIONS PROCEDURES

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This volume implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*, Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*; and is consistent with Air Force Manual (AFMAN) 11-202 Volume 3, *Flight Operations*. This volume, with its complementary unit-specific *Local Procedures Supplement*, prescribes standard operational and weapons employment procedures to be used by all aircrew operating on United States Air Force (USAF) HH-60G aircraft. It applies to all civilian employees and uniformed members of the Regular Air Force, Air Force Reserve (AFR) and Air National Guard (ANG) performing aircrew duties in HH-60G aircraft. This publication does not apply to the United States Space Force. Ensure all records generated as a result of processes prescribed in this publication adhere to AFI 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is 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 DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all supplements must be routed to the Office of Primary Responsibility (OPR) of this publication prior to certification and approval. The authorities to waive wing or 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 Department of the Air Force Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, 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.

Commanders may waive non-tiered requirements however a copy of the approved waiver must be sent to the OPR of the higher headquarters publication being waived (see DAFMAN 90-161, paragraph 9.2.2 and 9.5) within 30 days of approval. See [paragraph 1.5](#) for waiver approval authorities 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 DAF.

SUMMARY OF CHANGES

This publication has been revised significantly to align terminology, requirements, and waiver authority with AFMAN 11-2HH-60W Volume 3, *HH-60W Operations Procedures*, and should be reviewed thoroughly.

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Chapter 1

GENERAL INFORMATION

1.1. Purpose. This volume, including AFMAN 11-2HH-60G Volume 3, *Checklist 1 (CL-1)*, *HH-60G Helicopter Crew Briefing Guides and Checklists* in conjunction with aircraft flight manuals, flight information publications (FLIPs), and other governing directives prescribes procedures for operating the HH-60G. When guidance in this volume conflicts with another basic/source document, the basic/source document takes precedence. Air Combat Command Personnel Recovery Operations Division (ACC/A3J) has overall responsibility for administration of this publication and associated checklists.

1.2. Key Words Explained.

1.2.1. “Will” indicates a mandatory requirement.

1.2.2. “Should” is normally used to indicate a preferred, but not mandatory, method of accomplishment.

1.2.3. “May” indicates an acceptable or suggested means of accomplishment.

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

1.2.5. **Caution.** Operating procedures, techniques, etc., which may result in damage to equipment if not carefully followed.

1.2.6. **Note.** Operating procedures, techniques, etc., which are essential to emphasize.

1.3. Deviations. Do not deviate from policies in this AFMAN except when the situation demands immediate action to enhance safety and/or an urgent requirement exists. **(T-1)** In this case, the pilot in command will evaluate all options and take the appropriate action to ensure the safe recovery of the aircraft, crew, and survivors.

1.3.1. Units will report all deviations without an approved waiver in accordance with AFMAN 11-202V3. **(T-2)**

1.3.2. When it is necessary to protect the aircraft and its occupants from a situation not covered by this manual and immediate action is required, the aircraft commander (AC) has ultimate authority and responsibility for the course of action to be taken.

1.4. Waivers. See DAFMAN 90-161, for a description of the authorities associated with the tier numbers. Unless otherwise directed or annotated by a specific tier level, the waiver authority for contents of this publication is the requestor’s commander for non-tiered compliance items. File a copy of all approved waivers with this volume per guidance in DAFMAN 90-161, paragraphs 9.2.2 and 9.5.

1.4.1. Waivers are issued for a maximum of one year from the effective date. Provide ACC/A3J info copies of all Major Command (MAJCOM)/A3 or Commander, Air Force Forces (COMAFFOR) issued waivers within 72 hours of approval. **(T-2)**

1.4.2. Submit waivers using DAF Form 679, *Air Force Publication Compliance Item Waiver Request/Approval*, through local channels to ACC/A3J (ACC units); United States Air Forces Europe, Operations Support Division (USAFE/A3A) (United States Air Forces in Europe-Air

Forces Africa (USAFE-AFAFRICA) units); Pacific Air Forces (PACAF), Operations Support Division (PACAF/A31) (PACAF units); 19th Air Force, Standards and Evaluations Division (19 AF/A3V) (Air Education and Training Command (AETC) units); Air Force Reserve Command (AFRC), Personnel Recovery and Special Operations Division (AFRC/A3J) (AFRC units); National Guard Bureau, Personnel Recovery and Special Operations Division (NGB/A3J) (ANG units); or Air Force Material Command (AFMC) Operations and Training (AFMC/A3V) (AFMC units).

1.4.3. Units will maintain a copy of approved waivers and track the following information:

- 1.4.3.1. Waiver type. (T-2)
- 1.4.3.2. Approval authority. (T-2)
- 1.4.3.3. Approval date. (T-2)
- 1.4.3.4. Waiver number. (T-2)
- 1.4.3.5. Waiver expiration date. (T-2)

1.5. Development of New Equipment and Procedures. Units are encouraged to suggest new equipment and tactics. MAJCOM and ACC approval must be obtained prior to testing and/or use. (T-2)

1.5.1. Tactics Recommendation or Modification. Submit tactics changes in accordance with DAFMAN 11-260, *Tactics Development Program* to MAJCOM/A3TW Weapons and Tactics Branch (ACC and USAFE-AFAFRICA units); PACAF, Standardization and Evaluation Branch (PACAF/A316)(PACAF units); 19 AF/A3V (AETC units); NGB/A3J (ANG units); and AFRC/A3J (AFRC units) using an AF Form 4326, *Tactic Improvement Proposal*. MAJCOMs should forward approved changes to Air Combat Command Weapons and Tactics Branch (ACC/A3TW).

1.5.2. Equipment Modification Proposal. Submit new equipment (to include aircrew flight equipment (AFE) or modification requests to respective MAJCOM/A3T (USAFE-AFAFRICA), PACAF/A316 (PACAF units), NGB/A3J, AFRC/A3J (AFRC units), ACC/A3J (ACC units), 19 AF/A3V (AETC units), or Air Force Material Command Flight Operations and Standardization and Evaluations Division (AFMC/A3V)(AFMC units) using an AF Form 1067, *Modification Proposal*. Forward approved changes to ACC/A3J.

1.5.3. Electronic Equipment Approval. Submit requests for approval of new electronic mission equipment and aircraft equipment through local channels to Air Combat Command HH-60G/Operational Loss Replacement Branch (ACC/A5RA) (National Guard Bureau Special Missions Branch (NGB/A5RS) for ANG units and AFRC/A3DJ for AFRC units).

1.6. Roles and Responsibilities.

1.6.1. Air Combat Command, Director of Air and Space Operations (ACC/A3) is designated as the responsible agency for this volume in accordance with AFPD 11-2.

1.6.2. MAJCOM Responsibilities:

- 1.6.2.1. Determine MAJCOM specific requirements as required to fulfill primary and secondary Designed Operational Capability statement missions and unit taskings. Using MAJCOMs may adopt lead MAJCOM guidance as outlined in this manual.

1.6.2.2. Review subordinate unit supplemental instructions as directed by MAJCOM guidance.

1.6.3. Additional specific operational responsibilities are addressed within this manual.

Chapter 2

GENERAL OPERATING GUIDANCE

2.1. Aircraft Commander (AC) Responsibility and Authority. All flights will have a designated pilot-in-command in accordance with DAFMAN 11-401, *Aviation Management*. **(T-1)** ACs are:

- 2.1.1. In command of all persons aboard the aircraft. **(T-1)**
- 2.1.2. Vested with the authority necessary to manage their crew and accomplish the mission.
- 2.1.3. Responsible for the welfare of the crew and the safe accomplishment of the mission.
- 2.1.4. The final mission authority and make decisions not specifically assigned to higher authority.
- 2.1.5. The final authority for requesting and accepting any waiver affecting the crew or mission.
- 2.1.6. Responsible for ensuring aircraft security when away from home station. **(T-1)**
- 2.1.7. Charged with keeping the applicable commander informed concerning mission progress.
- 2.1.8. Responsible for ensuring all applicable briefings and checklists are completed prior to the event.
- 2.1.9. Responsible for the debrief of maintenance personnel on the condition of the aircraft and equipment.
- 2.1.10. Responsible for adhering to all inflight training and operational minimums referenced in this AFMAN.

2.2. Mission Clearance Decision. The final decision to delay a mission may be made either by the commander with operational or tactical control or the AC when, in the opinion of either, conditions are not safe to start or continue a mission. Final responsibility for the safe conduct of the mission rests with the AC. If the AC determines that conditions are not safe to prosecute the mission, the aircraft will not depart until the conditions have been corrected or improved so that the mission can continue safely. **(T-3)** Another AC and/or crew will not be designated to take the same mission under the same conditions unless in the judgment of the squadron commander (SQ/CC) those conditions do not violate or exceed published operating guidelines (e.g., weather, rules of engagement, performance). **(T-3)**

2.3. Defense Support of Civil Authorities. Request for helicopter support by civil authorities will be handled in accordance with AFI 10-801, *Defense Support of Civil Authorities*. **(T-1)** In cases of extreme emergencies, in order to prevent the loss of life, prevent human suffering, or mitigate great property damage, a military commander may offer helicopter assistance to civil authorities and casualties necessary to meet immediate needs until sufficient resources are available.

2.4. Medical Evacuation Missions. Medical evacuation flights may be operated to transport seriously ill or injured persons, and/or to transport medical personnel, equipment, or supplies under

emergency conditions when other means are not suitable or readily available. Ensure mission requests are coordinated through the appropriate Rescue Coordination Center.

2.5. Aircrew Qualification. Aircrew members occupying a primary position during flight must be HH-60G qualified or certified and current for the mission events to be flown or conducting training/recurrency for that crew position/mission in accordance with AFMAN 11-2HH-60G Volume 1, *HH-60G Aircrew Training*, unless exempt by DAFMAN 11-401. **(T-1)**

2.6. Crew Complement. The minimum crew is two pilots and one Special Mission Aviator (SMA). **(T-1)** This document defines low level flight as maneuvers (except for departures and arrivals) involving flight below 500 feet above ground level (AGL). Except for profiles identified in **Table 2.1**, low level flight requires 2 SMAs. **(T-1)**

2.6.1. A MAJCOM designated flight test engineer may fly in place of a copilot in accordance with DAFMAN 11-401. Flight test engineers will not have control of the aircraft during critical phases of flight. **(T-1)**

2.6.2. Waiver Authority. The Operations Group Commander (OG/CC) may waive crew complements outlined in **Table 2.1** but not lower than the minimum crew prescribed by the flight manual.

Table 2.1. Crew Complement.

MISSION/EVENT	CREW COMPLIMENT	
	P	SMA
Maintenance Ground Run ¹	1	1
“H3”: Health Indicator Test (HIT) Check, Hover, Hoist	2	1
EP sortie, Contact or Remote Operations ²	2	1
Ferry Flight/Cross Country ³	2	1
Instrument Sortie	2	1
Sling Load/Bambi Bucket	2	1
Day Water Operations	2	1
Functional Check Flight (FCF) Sortie ⁴	2	1
Shipboard Operations	2	2
Day or Night Vision Goggles (NVG) Low Level/Formation	2	2
Helicopter Air-to-Air Refueling (HAAR) ⁵	2	2
Restricted Visibility Operations	2	2
Aircraft Handling Characteristics (AHC)	2	2
NVG Water Operations	2	2

Notes:

1. Aircraft taxi and flight prohibited. The SMA must be engine-run certified. **(T-2)** Two pilots are authorized to perform maintenance ground runs without a SMA provided a SMA accomplishes the preflight inspection. A pilot or engine-run certified SMA may perform maintenance ground runs with engine-run qualified maintenance personnel for non-rotors turning operations. The pilot crew position is considered any HH-60G qualified mission pilot/first pilot (MP/FP).
2. NVG remote operations and NVG autorotations require 2 SMAs.
3. Tactical maneuvering or low-level flight requires 2 SMAs. Formation requires the SMA to be positioned in the cabin on the same side as the trail aircraft
4. When FCF-certified aircrew members are not available, non-certified aircrew members may be designated by the squadron/deployed commander or his/her representative on the flight authorization.
5. Day single ship HAAR (single tanker operations only) requires 1 SMA. The SMA will be positioned in the cabin on the same side as the tanker. **(T-2)**

2.7. Mission Essential Personnel (MEP). Supporting/Supported Personnel. The approving authority for Department of Defense (DoD) supporting/supported personnel for tactical training and operational missions is in accordance with DAFMAN 11-401.

2.7.1. Supporting personnel are required to accomplish mission/training tasks in-flight and at the objective area. These tasks include but are not limited to in-flight medical care, mission monitoring/management, performance of alternate insertions/extractions (AIEs), survivor or asset role-play, and actions at the objective.

2.7.2. Supported personnel are those required to be onboard the helicopter to accomplish their mission/training. Tasks include but are not limited to in-flight medical care, mission monitoring/management, performance of AIEs, participation in FCFs, military dog handlers, and actions at the objective. SQ/CCs must weigh the benefits and risks of flying supported personnel and ensure that mission requirements are met for both parties.

2.8. Passengers.

2.8.1. Passenger Travel. The HH-60G is designated as a personnel recovery platform. Passenger travel is not authorized on HH-60G aircraft unless all organic airlift and rotary-wing requirements of Air Force Policy Directive 24-6, *Transportation*, and DAFMAN 11-401, *Aviation Management*. DoDD 4500.56 outlines criteria for passenger movements on DoD aircraft. Passengers will not occupy a seat with access to a set of controls. **(T-2)**

2.8.2. Passengers not classified as MEP will not be carried on flights involving low-level flight, pilot re-currency, AHC, basic helicopter maneuvering (BHM), air combat maneuvering (ACM), unusual attitudes, any water operations sorties, and practice emergency procedures. **(T-2)** Additionally, air refueling, and threat reaction maneuvers are prohibited during spouse orientation flights. **(T-2)** DAFMAN 11-401 provides additional guidance. **Exception:** The OG/CC with operational control of the aircraft will determine mission restrictions on flights with MEP or passengers on familiarization flights. **(T-2)**

2.8.3. Authorized passengers (including MEP) occupying a cabin crew position should be on intercom, will have appropriate restraint devices worn, and will not occupy a seat with a weapon that contains live ammunition unless under direct supervision of an instructor qualified and certified on the weapon. **(T-2)**

2.9. Inter-fly. Inter-fly is the temporary exchange or substitution of aircrew members and/or aircraft between MAJCOMs. Approval authority for aircrew inter-fly is the requesting and supporting operations OG/CC. The OG/CC and service equivalent is the approval authority for qualified HH-60 aircrew members from other United States (US) military services. AFMAN 11-2HH-60GV1 specifies HH-60G difference qualification training for H-60 aircrew from other US military services. Inter-fly approval is not required for:

2.9.1. 34th Weapons Squadron (34 WPS) aircrew or students during syllabus or related events which also include:

2.9.1.1. Weapons Instructor Course looks or squadron visits.

2.9.1.2. Aircrew supporting either the 34 WPS Weapons Instructor Course or the Advanced Instructor Course syllabi or related flight events.

2.9.2. Aircrew supporting 512th Rescue Squadron syllabi or related events.

2.9.3. Any UH-60M/HH-60U/W/G test aircrew members assigned or attached to ACC, AFMC, NGB, and AFRC.

2.9.4. MAJCOM approved joint exercises and training (e.g., High-Altitude Army National Guard Aviation Training Site, Deck Landing Qualification Training, Combat Air Forces Aviation Scheduling Integrated Product Team taskings).

2.9.5. Higher headquarters unit visits, staff assistance visits, aircrew qualification checks, formal visits, operational readiness inspections, and operational readiness exercises.

2.9.6. Senior supervisory and staff aircrew members approved in accordance with DAFMAN 11-401.

2.9.7. Aircrew serving on an operational deployment or humanitarian mission with other units of different MAJCOMs.

2.10. Intra-fly. Intra-fly is the exchange and/or substitution of aircrew members from separate units under the same MAJCOM to accomplish flying missions. The OG/CC possessing the aircraft is the approval authority, delegable to SQ/CC.

2.11. Alert Procedures. Alert crews will conduct a briefing at the beginning of each alert period. **(T-3)** The briefing will be updated every 24 hours to include weather, Notice to Air Missions (NOTAMs), recently published flight crew information files, special instructions (SPINS), and appropriate items as determined by the SQ/CC, flight lead, or AC. **(T-3)**

2.11.1. A Department of Defense Form (DD Form) 365-4, *Weight and Balance Clearance Form F - Transport/Tactical*, will be completed and signed for the alert aircraft. **(T-2)** A canned DD Form 365-4 is authorized provided the aircraft configuration for the alert period does not change.

2.11.2. Alert crews are authorized to prepare takeoff and landing data (TOLD) using the worst weather conditions expected during the alert period. This TOLD will be used only for alert

scrambles. **(T-3)** If the alert aircraft is flown for other reasons, TOLD will be computed using existing weather conditions. **(T-3)**

2.12. Alert Aircraft. Prepare the aircraft by performing the Cocking and Scramble Procedures outlined in Technical Order (TO) 1H-60(H)G-1, *Flight Manual USAF Series HH-60G* and configure/position required equipment.

2.12.1. Hoist equipped alert aircraft will plan for an alternate means of recovery in the event of hoist malfunction or failure. **(T-3)**

2.12.2. Once accepted for alert, make the following entry in the Air Force Technical Order (AFTO) FORM 781A, *Maintenance Discrepancy and Work Document*: “INFO NOTE: Aircraft accepted for alert (time/date). HIT, Hover and Hoist Checks completed.”

2.12.3. To ensure integrity of the preflight, no maintenance (aircraft or weapons) will be performed without the approval of the AC. **(T-3)** A qualified HH-60G aircrew member will be present whenever maintenance is performed, or at the completion of the maintenance to check the area(s) in which maintenance was performed, to include the appropriate cockpit configuration. **(T-3)**

2.12.3.1. If the AC approves any maintenance action on an aircraft after being accepted on alert, make the following entry in the AFTO FORM 781A: “INFO NOTE: Aircraft remains on alert. Maintenance cleared to work (equipment/system) only.”

2.12.3.2. Once a qualified HH-60G aircrew member inspects and accepts the aircraft following maintenance actions, make the following entry in the AFTO FORM 781A, “INFO NOTE: Post maintenance look over completed (time/date). Aircraft remains on alert.” This entry compliments and does not replace the original alert aircraft acceptance entry.

2.12.4. For aircraft remaining on alert after a maintenance preflight, prepare the aircraft by accomplishing items outlined in **paragraph 2.12.** **(T-2)**

2.12.5. A thru-flight inspection consisting of asterisked items of the BEFORE EXTERIOR INSPECTION, EXTERIOR INSPECTION and INTERIOR INSPECTION checklists will be accomplished after each flight (e.g., alert launch, mission rehearsal). **(T-3)** **Note:** Completion of a thru-flight inspection does not reset the maintenance preflight requirement. **Exception:** Immediate follow-on missions that preclude the accomplishment of inspections. In this situation, at a minimum, a walk around will be accomplished to verify the aircraft did not sustain damage.

2.12.6. Alert aircraft may be flown for purposes other than actual alert missions provided the following conditions are met:

2.12.6.1. Alert requirements can be met with sufficient fuel and ammunition to meet mission requirements.

2.12.6.2. Communication contact is maintained with the primary controlling agency.

2.12.6.3. Controlling agencies are notified any time the alert aircraft departs the local area.

2.13. Armed Aircrew. SQ/CCs may direct arming of aircrew members as deemed necessary by mission threat analysis. During all operations with an aircraft weapon system on board, an aircrew member will be armed with an approved Air Force small arms weapon. **(T-1)** Protect aircraft

weapons in accordance with AFI 31-117, *Arming and Use of Force by Air Force Personnel*, and AFMAN 31-129, *USAF Small Arms and Light Weapons Handling Procedures*. **Exception:** Units operating outside the continental United States (OCONUS) are exempt from being armed if prohibited by host nation laws or a status of forces agreement.

2.14. Aircraft Security. The AC is ultimately responsible for the security of their aircraft when located away from US military installations. Pre-mission planning should ensure that adequate enroute security is available. To the maximum extent possible, unattended aircraft will over-night at secure military facilities. **(T-3)** If mission requirements dictate remaining overnight at an unsecure airfield, the AC will ensure adequate aircraft security. **(T-2)** Refer to Air Force Life Cycle Management Center Special Operations Forces, Personnel Recovery and Rotary Division (AFLCMC/WIU) HH-60G PAVE HAWK Helicopter Security Classification Guide and AFI 31-101 Volume 1, *Integrated Defense (ID) Planning* for security requirements of Protection Level 4 assets.

2.15. Armed Passengers. The AC is the approving authority for armed passengers.

2.16. Utilization of Civilian Law Enforcement or Medical Personnel. With Wing Commander (WG/CC) approval, civilian law enforcement or medical personnel may be transported to mishap/disaster sites when responding under immediate response authority as outlined in AFI 10-801.

2.16.1. Under imminent, serious conditions, when unable to make contact for approval or time does not permit approval, the military commander may approve civilian law enforcement/medical personnel to fly aboard the aircraft to save lives, prevent human suffering, or mitigate great property damage within the US. Organizations acting under immediate response authority will not use military force to quell civil disturbances unless specifically authorized by the President in accordance with applicable law or permitted under emergency authority. **(T-0)**

2.16.2. The primary method of deploying or recovering civilian law enforcement or medical personnel is by landing. Civilian law enforcement or medical personnel may be deployed and recovered by the hoist provided all other transport resources have been examined and determined to be inadequate and approval is obtained from the OG/CC (delegable to the flying SQ/CC). Prior to hoist deployment, brief civilian law enforcement or medical personnel on applicable procedures, safety and emergency considerations involved.

2.17. Maximum Flight Duty Period. In accordance with AFMAN 11-202V3 and MAJCOM supplements.

2.18. Crew Rest Period. In accordance with AFMAN 11-202V3 and MAJCOM supplements.

2.19. Deployment Spin-up. Prior to known/anticipated contingencies, units will complete pre-deployment spin-up training outlined in AFMAN 11-2HH-60GV1 within 90 days of required delivery date. **(T-3)** Notify the OG/CC if spin-up training begins beyond 90 days of the required delivery date. **(T-3)**

Chapter 3

MISSION PLANNING/FLIGHT PREPARATION

3.1. Responsibilities. The responsibility for mission planning/preparation is shared jointly by the individual aircrew members, and operations and intelligence functions of the organization. Units will ensure that electronic mission planning systems are updated and configured in accordance with the current mission planning environment letter on the Mission Planning Central website (Home - Mission Planning Central Home (mission-planning.org)). **(T-2)**

3.2. Bird/Wildlife Aircraft Strike Hazard (BASH) Programs. Bird Watch Conditions are defined in DAFI 91-202, *The US Air Force Mishap Prevention Program*, and DAFI 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Program*. The OG/CC will determine local BASH procedures in accordance with AFMAN 11-202V3 and MAJCOM supplements. **(T-1)**

3.2.1. Takeoffs, landings, or low-level flight within one hour of either sunrise or sunset during the phase II period increase the likelihood of bird strike. Significant bird hazards are published in FLIP GP, the instrument flight rules (IFR) Supplement and local airfield guidance. OCONUS units will comply with host nation requirements. **(T-2)**

3.2.2. When operating at airfields where no BASH program exists, pilots will make appropriate decisions based on observable bird conditions and make a reasonable effort to seek assistance from personnel with appropriate local knowledge. **(T-2)** Such areas may include low level areas/routes, terminal areas, and ranges.

3.2.3. Pilots will consider bird migratory patterns during enroute, low level areas/routes, terminal operations areas, and range portions of the mission to minimize the potential of an inflight bird strike. **(T-3)** The Bird Avoidance Model on United States Avian Hazard Advisory System (<http://www.usahas.com>) provides BASH information, including regionalized continental United States (CONUS) bird migration, mission planning software overlays, and latest news. See DAFI 91-212 for additional information. OCONUS units will utilize products in accordance with local and host nation guidance. **(T-2)**

3.3. Briefing/Debriefing Requirements. Use applicable briefing guides in AFMAN 11-2HH60V3 CL-1 for briefings **(T-2)** **Note:** Guides contained in Air Force Tactics Techniques and Procedures (AFTTP) 3-3.HH-60G, *Combat Aircraft Fundamentals HH-60G* may be utilized in place of AFMAN 11-2HH-60V3 CL-1 guides provided all requirements are met.

3.3.1. The AC or flight lead will:

3.3.1.1. Present a logical briefing that promotes safe, effective mission accomplishment and covers all specific areas/events. Mission elements/events may be modified and briefed airborne provided flight safety is not compromised. **(T-3)**

3.3.1.2. Ensure briefing length (start and end time) provides adequate time to discuss required items, accounts for mission complexity and affords appropriate time for aircraft preflight and preparation requirements to be complete prior to stations time. **(T-3)**

3.3.1.3. Ensure all aircrew members attend the briefing unless previously coordinated with the AC/flight lead. Anyone not attending the flight briefing must receive a briefing on mission events, duties, and emergency procedures prior to flight. **(T-3)**

3.3.1.4. Ensure that briefers cover the required topics addressed in [paragraph 3.3.2](#) and its subparagraphs. **(T-3)**

3.3.2. Briefers will reference applicable portions of briefing guides. Items listed may be briefed in any sequence. Those items published in AFIs, AFTTPs, or locally developed standard operating procedures and understood by all participants may be briefed as “standard.” Specific items not pertinent to the mission do not need to be covered.

3.3.2.1. Brief all potential hazards and obstructions along the entire route of flight and potential areas off-route, including minimum altitudes required to mitigate undetected hazards. **(T-2)** Pay special attention to areas of high-density hazards, as some factor hazards may be obscured or masked by other non-factor hazards. **Warning:** Failure to brief hazards can lead to reduced shared situational awareness and may result in insufficient advanced detection time prior to the hazards. Some hazards may not be annotated correctly on maps or navigation aids. Uncharted wires may be suspended between tall towers, even those not associated with power lines.

3.3.2.2. The briefing will include BASH considerations outlined in [paragraph 3.2](#). **(T-2)**

3.3.2.3. Ensure all passengers are briefed in accordance with applicable flight manuals and MAJCOM guidance. Overwater flights will include a briefing on personal and aircraft life support equipment (e.g., life preserver use and life rafts). **(T-2)**

3.3.2.4. Ensure dissimilar formation briefings include responsibilities, formation spacing, aircraft capabilities/limitations and tactics for each phase of flight. **(T-2)**

3.3.2.5. Evaluate and mitigate risk appropriately for the flight by utilizing risk management (RM) principles. **(T-2)** Use RM worksheets to identify risks, mitigation measures, and document risk acceptance at the appropriate levels. **(T-3)**

3.3.2.6. Ensure contracts, roles, and responsibilities of each flight member are established, briefed, and understood by all participants. **(T-2)**

3.3.2.7. Debrief all missions. **(T-3)** Debriefing aids such as approved, portable video tape recorders (VTR) and global positioning system (GPS) trails should be used to enhance capturing lessons learned.

3.4. Weather Minimums.

3.4.1. Visual Flight Rules (VFR) Minimums. **Note:** Weather minimums below do not apply to hover and air taxi operations at the aerodrome and the OG/CC may establish weather criteria for flights which only require hover operations. OG/CC may delegate this authority to the SQ/CC.

3.4.1.1. Day training. 700 foot ceiling and 1 statute mile (SM) visibility. **(T-1)**

3.4.1.2. Night training.

3.4.1.2.1. Unaided and Emergency Procedures. 1,000 foot ceiling and 3 SM visibility. **(T-1)**

3.4.1.2.2. Night Vision Goggle (NVG): 700 foot ceiling and 2 SM visibility. **(T-1)**

3.4.1.3. Operational Flights. Comply with AFMAN 11-202V3, helicopter weather minimums unless local or theater specific-weather minimums are more restrictive. **(T-1)**

3.4.2. Instrument Flight Rules Takeoff Minimums.

3.4.2.1. Training Flights. Weather equal to or higher than published approach minimums (ceiling and visibility), but no less than one-half mile (2,400 feet runway visual range (RVR)) at the departure airfield. **(T-1)**

3.4.2.2. Operational Flights.

3.4.2.2.1. Without a Departure Alternate. Visibility at the departure point must be at or above the published visibility minimums required for the appropriate aircraft category for an available approach. **(T-1)**

3.4.2.2.2. With a Departure Alternate. Weather at the departure point must be equal to or above one-half the published visibility minimums required for the appropriate aircraft category, but no less than one-quarter mile (1200 RVR) for an available approach. **(T-1)** Published visibility is required if a copter-only approach is used at the departure airfield. **(T-1)**

3.4.2.2.2.1. The departure alternate prevailing weather must be equal to or better than the lowest published approach ceiling and visibility minimum (no lower than 1200 RVR) and forecast to remain so for 1 hour after the time of expected arrival. **(T-1)**

3.4.2.2.2.2. The departure alternate should be within 60 minutes flight time.

3.4.3. IFR Minimums. Comply with AFMAN 11-202V3 helicopter weather minimums or local/theater-specific weather minimums, whichever is more restrictive.

3.4.4. Life or Death Missions. The WG/CC may approve helicopters to take off with visibility less than the requirements of [paragraph 3.4.2.2](#). Ensure an appropriate course of action is available (and briefed) in the event of an emergency after takeoff. **(T-1)** Weather at the recovery and landing areas must meet the minimum requirements of AFMAN 11-202V3. **(T-1)**

3.5. Adverse Weather Planning. Comply with AFMAN 11-202V3 and MAJCOM guidance. Do not fly into rain shafts beneath cumulonimbus clouds. **(T-2)**

3.6. Fuel Planning. Aircrews will manage aviation fuel as a limited commodity and precious resource. **(T-1)** Design procedures for optimal fuel use and efficiency throughout all phases of mission execution, to include ground operations and flight profiles. Incorporate en route tasks to make maximum use of airborne training opportunities. Terminate the sortie when mission and training objectives are met.

3.6.1. For all flights, VFR or IFR, plan to land at the destination with no less than 500 pounds usable fuel. **(T-2)**

3.6.2. For instrument flight planning purposes, when visibility-only criterion is used, or when destination weather information may be unreliable, fuel requirements for descent, approach, and missed approach will be no less than 20 minutes usable fuel in addition to required reserves. **(T-2)**

3.7. Area Maps.

3.7.1. Master Low-level Hazards Map. Hazards and obstacles to local operations and frequently used areas will be plotted on a suitable chart or suitable digital substitute. **(T-3)**

Display the map in the mission planning area or maintain the electronic files on all unit computer-aided mission planning systems. **(T-3)** When uncharted obstacles are found, update the chart/files with location, approximate height in both AGL and mean sea level (MSL) and bring the obstacles to the attention of all aircrew members. **(T-3)** Review the map/files monthly and update using the Vector Vertical Obstruction Database (VVOD) or equivalent host nation or National Geospatial-Intelligence Agency (NGA) product. **(T-3)** Annotate the date of review on the master map. **(T-3)** VVOD currency can be determined by visiting the NGA Web DVOF site and checking the “Database Date” (<https://dvof.geointel.nga.mil/dvofpre-num.cfm>). Maps used for low-level navigation will reflect the same information as the master low-level hazards map. **(T-3)**

3.7.2. VFR Flight Maps. Aircrews flying VFR will include sectional charts or Portable Flight Planning System (PFPS)/FalconView[®] produced maps with airports/heliports, airspace boundaries, airways, military training routes (MTRs), parachute jump, and special use airspace boundaries displayed during mission planning. Low-level maps and route books used during flight will be annotated with the location and dimensions of class B/C/D airspace, civil/military airfields and other potential high density traffic areas (e.g., parachute activity areas, ultra-light/hang glider sites) within 5 nautical miles (NM) of planned route. Annotate and brief applicable airfield approach control frequencies in the vicinity of class B/C/D airspace, MTR crossing, and any other possible areas of conflict. VVOD, or equivalent, and local Chart Updating Manual (CHUM) overlays will also be displayed on PFPS/Joint mission Planning System (JMPS) produced VFR Flight maps. **Warning:** Sectional charts do not accurately depict the location of hazards. Use extreme caution when utilizing sectional charts near charted obstacles.

3.7.2.1. Pilots will carry a paper map on all flights. **(T-3)** These maps will comply with requirements in **paragraph 3.7.2.** **(T-3) Exception:** Paper maps are not required when there are two electronic maps available to the crew. Approved electronic maps are: 1) smart multi-functional color displays (SMFCD), 2) an Electronically Linked Mission Overlay with PFPS/JMPS, and 3) Electronic Flight Bags (EFB) with Foreflight (or equivalent) installed. Electronic maps will comply with the requirements in paragraphs **3.7.2, 3.7.3, and 3.7.4.** **(T-3)**

3.7.2.2. AFMC may use Aviation Mission Planning System (AMPS) in lieu of PFPS.

3.7.3. Map Selection. Maps with a scale of 1:250,000 or greater detail are required for low level operations. **(T-3)**

3.7.4. Low-Level Map Annotations. At a minimum annotate course line, waypoints, hazards, minimum safe altitude(s) (MSA), and threats. **(T-3)**

3.8. Helicopter Landing Zones.

3.8.1. Landing Zone (LZ) Surveys. Conduct in accordance with DAFMAN 13-217, *Drop Zone, Landing Zone, and Helicopter Landing Zone Operations* and the following:

3.8.1.1. Single-ship training LZs must provide a minimum of 25-foot clearance from any portion of the helicopter to the nearest obstacle. **(T-2)**

3.8.1.2. Multiple-ship LZs must provide a minimum of one rotor diameter width separation between aircraft and 25 feet of clearance from all other obstacles. **(T-2)**

3.8.1.3. The AF Form 4303, *Helicopter Landing Zone Survey* will be annotated with any restrictions and limitations (hover operations only, single-/multi-ship operations, etc.). (T-2)

3.8.1.4. When simulated alert missions preclude the crew from reviewing LZ surveys in advance, the operations superintendent or other responsible individual will ensure the AC is aware of the following prior to commencing operations in the LZ: LZ survey expiration date, obstructions/obstacles, power requirements, restrictions and approach or escape route designations. (T-2)

3.8.2. Exercise helicopter landing zone surveys. If an aircrew helicopter landing zone survey is not possible, SQ/CCs may authorize ACs to use one of the following methods, in order of priority: Combat Control Team or ground party, satellite photography survey, or thorough map survey (1:50,000 scale map or less). Aircrews will exercise extreme caution when operating into sites that were surveyed with one of these methods.

3.8.3. Non-surveyed/unprepared landing area. Complete a site evaluation in accordance with [paragraph 4.13](#) when landing to a non-surveyed/unprepared or unfamiliar landing area. (T-1)

3.9. Low-Level Surveys. Prior to training or exercise operations below 500 feet AGL, accomplish a survey of the route/area as follows:

3.9.1. Conduct an extensive map study of the selected routes and areas. Annotate all manmade obstacles over 50 feet AGL and published low-level routes, avoid areas or other hazards within the boundaries. Use the CHUM or host nation procedures to ensure current obstacles are depicted. (T-2)

3.9.2. An experienced pilot selected by the SQ/CC or Squadron Director of Operations (SQ/DO) will fly the survey in day visual meteorological conditions (VMC). (T-3) The crew will conduct a visual search of the proposed route or area at the lowest applicable altitude down to a minimum altitude of 50 feet AGL. (T-3)

3.9.3. If surveying the entire area is not possible, ensure the area within 5 NMs of the route is surveyed. (T-3)

3.9.4. If a route or area has been inactive or flight operations have not been conducted in 12 months or greater, re-accomplish the survey or restrict operations to at or above the lowest level flown during the 12-month period. (T-2)

3.9.5. Units deployed for training, operational, and exercise missions do not have to conduct independent flight survey if a current master map and flight survey is provided to the deployed unit by a DoD or North Atlantic Treaty Organization (NATO) military agency that operates helicopters.

3.10. NVG Requirements and Illumination:

3.10.1. Night operations into unprepared/unlighted areas may only be conducted using NVGs.

3.10.2. The SQ/CC may authorize operations into prepared/unlighted areas unaided, provided the crew is aware of all obstacles, and aircraft lighting provides sufficient illumination to clearly see the approach path, landing surface and obstacles.

3.10.3. The AC will factor terrain, crew experience, and mission complexity into the risk assessment and determine whether there is sufficient available illumination to safely conduct

NVG low-level operations. **(T-3)** When available ambient illumination is insufficient to safely conduct NVG flight, the minimum altitude is 500 feet AGL in non-mountainous areas and 500 feet above highest obstacle (AHO) within 2 NM of course centerline in mountainous areas. **(T-3) Note:** Mountainous areas are defined as an area of changing terrain where the changes of terrain elevation exceed 3000 feet within 10 NM.

3.10.4. NVG flight requires an operational forward looking infrared (FLIR), an infrared (IR) landing/search light, or a variable intensity landing/search light, in addition to a visible landing/searchlight. AFMAN 11-2HH-60V3 CL-1 lists other aircraft equipment required for flight.

3.10.5. Landing/searchlights will be on for all unaided night takeoffs and after turning final for night unaided approaches unless safety, weather, excessive glare or operational mission requirements dictate otherwise. **(T-3)**

3.10.6. NVGs must be preflight tested and adjusted by the individual prior to NVG operations.

3.10.7. Aircrew members will announce to the crew when donning or doffing NVGs during taxi or flight operations. **(T-2)**

3.10.8. Low Illumination Restrictions. Defined as less than 10% equivalent moon illumination. Formation geometry should not exceed 1-3 rotor disks and 30 degree aspect unless additional non-visual station keeping methods are used from [paragraph 6.4](#).

3.10.9. Medium Illumination Restrictions. Defined as the range between 10-40% equivalent moon illumination. Formation geometry should not exceed 1-10 rotor disks and 45 degree aspect unless additional non-visual station keeping methods are used from [paragraph 6.4](#).

3.10.10. High Illumination Restrictions. Defined as greater than 40% equivalent moon illumination. Minimum aircraft separation is 1 rotor disk. The maximum separation is based on environmental conditions, crew experience, threat situation, and mission requirements. Maneuvers are in accordance with AFTTP 3-3.HH-60G.

3.11. Altitude Restrictions. Conduct all operations at or above 500 feet AGL except when lower altitudes are required for takeoff, departure, arrival, landing, operational missions, and exercise/training flights in approved areas or approved exercise missions. **(T-2)**

3.11.1. Minimum Safe Altitude. Compute a minimum safe altitude for each leg of a low-level route. **Exception:** For flights conducted in a designated low-level area, one minimum safe altitude may be computed for the planned area of operation. The heading and altitude must provide a minimum of 1,000 feet (2,000 feet in mountainous areas) above the highest obstacle within 5 NM of either side of the planned route centerline. **(T-2)**

3.11.2. Obstacle Clearance. If known obstacles cannot be visually identified prior to 0.5 NM, climb to a sufficient altitude to ensure obstacle clearance, and do not descend to planned enroute altitude until obstacle clearance is assured. **Warning:** Unanticipated wires may be suspended between tall towers, even those not associated with power lines; crews should prioritize altitude separation when approaching multiple towers in close proximity, as there may be undetectable wires between various types of towers.

3.11.3. Night Unaided. Minimum enroute altitude is 500 feet AHO within 5 NM of the planned route centerline. **(T-2)**

3.11.4. Low-Level. Day and NVG low-level flight below 100 feet AGL is restricted to operational necessity or to meet specific training objectives and is conducted no lower than 50 feet AGL. **(T-2)**

3.11.5. NVG Overwater Flight. Except for terminal operations, the minimum altitude for night over water flight is 100 feet above water level (AWL). **(T-2)**

3.11.6. Helicopter Air-to-Air Refueling (HAAR). Minimum altitude for training is 1,000 feet AGL/AWL. Minimum altitude for operational missions is in accordance with AFTTP 3-3.HH-60G *Combat Aircraft Fundamentals HH-60G (U)* and Allied Tactical Publication (ATP) 3.3.4.2., *Air-to-Air Refueling*. HAAR will not be conducted with the cockpit doors removed. **(T-3) Exception:** Emergency situations/life or death missions.

3.11.7. Fuel Dumping. Do not initiate fuel dumping except for operational missions, MAJCOM exercises, or emergencies. **(T-2)** Except during emergencies or when operational needs dictate, fuel will not be dumped below 3,000 feet AGL or over agricultural or populated areas. **(T-0)**

3.12. Aircrew Flight Equipment (AFE), Clothing and Safety Equipment. Reference TO 14-1-1-WA-1, *U.S. Air Force Aircrew Flight Equipment Clothing and Equipment* for AFE equipment qualified by Air Force Life Cycle Management Center Sustainment Branch (AFLCMC/WNUS). This TO does not include items deemed safe-to-fly. Units may contact Air Force Life Cycle Management Center Air Crew Performance Branch (AFLCMC/WNUV) or the MAJCOM AFE Functional Manager for safe-to-fly approved items.

3.12.1. Aircrew members will wear helmets on all sorties. **(T-2) Exception:** Approved headsets may be worn for ground operations and hover checks.

3.12.2. Aircrew members will wear a survival vest for all contingency operations and exercises. **(T-3)** Home station minimum survival components will be stored in one pocket on the survival vest (except survival radio). **(T-2) Exception:** The FTU may use Aircrew Survival Backpacks (“go-bags”) for student AFE survival components in lieu of the survival vest. Aircrew survival vests are not bound by any standard configuration. Minimum survival components are outlined in TO 14S-1-3-51-WA-1, *Operation and Maintenance Instruction for Survival Kit Components and Survival Kit Container Assembly* and/or SPINS (if applicable). Additional components are authorized to be worn on the survival vest at the discretion of the aircrew member and are not required to be maintained by AFE.

3.12.3. Aircrew members will wear identification tags (dog tags) on their person. **(T-2)**

3.12.4. Overwater Flight. Overwater AFE is not required when overwater flight is limited to short distances during takeoff/landing. When the planned route of flight is beyond auto-rotational distance from land, all occupants will wear life preservers, and aircrew members will wear approved underwater breathing devices and anti-exposure suits in accordance with AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*, AFMAN 11-301, Volume 2, *Management and Configuration Requirements for Aircrew Flight Equipment (AFE)*, and MAJCOM instructions. **(T-2)** A life raft will be on-board for overwater flights when planned route of flight is beyond auto-rotational gliding distance of land. **(T-3)** A life raft is not required if a radio-equipped boat, hoist-capable helicopter, or aircraft capable of deploying a raft is providing mutual support coverage during overwater operations.

3.12.5. Aircrew members will wear the aircrew uniform and other approved flying clothing and equipment in accordance with AFMAN 11-301 publications and MAJCOM instructions. (T-2) Maintenance and logistics support personnel will wear flame resistant flight gear equivalent to the clothing and equipment used by aircrew in accordance with [paragraph 3.12](#) when performing in-flight duties. (T-3) Civilian contractors will abide by local contract requirements. (T-3)

3.12.6. Any personnel who are required to be near an operating helicopter require eye and ear protection. (T-1) Additionally, aircrew will ensure hearing protection is available and are responsible for distributing devices to passengers prior to flight. (T-3)

3.13. Hazardous Cargo Procedures. Should an aircraft be called upon to transport hazardous cargo, consult AFMAN 24-604, *Preparing Hazardous Material for Military Air Shipments*.

3.14. Hazardous Medical Equipment. A safe-to-fly list of equipment is maintained by Air Force Medical Readiness Agency Clinical Engineering & Sustainment Equipment (AFMRA/SG4E) and can be found at <https://medlog.us.af.mil/apps/equipcat/>. Users may need to request access to enter the site. Medical equipment not approved should be regarded as potentially hazardous.

3.14.1. Electronic medical equipment produces electromagnetic interference which is commonly beyond the limits specified by military standard (MIL STD) 461A and 462, and therefore can interfere with aircraft communication and navigational equipment.

3.14.1.1. The AC must be informed when nonstandard electronic medical equipment is brought on board the aircraft and the anticipated period of use during the mission. (T-2)

3.14.1.2. The crew must be alert for any interference with the aircraft communications or navigation equipment during periods of use of this equipment.

3.14.2. Therapeutic oxygen systems present an increased hazard of fire or explosion. A potential hazard is the inadvertent disruption of the cylinder neck, manifold, or regulator resulting in explosion and propulsion of the container or accessories.

3.14.2.1. Secure compressed oxygen equipment with exposed, unprotected cylinder neck, manifold, or regulator from all movement. (T-2)

3.14.2.2. Continually monitor the operation of the equipment to detect possible malfunction during exposure to altitude.

3.15. Takeoff and Landing Data (TOLD). ACs are responsible for ensuring TOLD calculations are complete. This responsibility is primarily delegated to the SMA who will have flight manual performance charts readily available. (T-3) “TOLD Books” are authorized and management/currency procedures will be documented in accordance with [Chapter 8](#).

3.15.1. The use of automated programs tested and certified may be used for TOLD calculations.

3.15.2. TOLD will be computed and briefed prior to takeoff. (T-2)

3.15.3. As a minimum, the following items will be briefed for all sorties: aircraft tail number, engine torque factors, aircraft torque factor, zero fuel weight, total fuel load, gross weight, power available (2.5 minutes & 10 minutes), power required, single engine airspeeds (SEAS), velocity never exceed (V_{NE}), and onset of blade stall. (T-2) Maximum sustainable bank angles

for planned weights and airspeeds using applicable flight manual and energy maneuverability (EM) charts will be computed for all sorties that include tactical maneuvering. (T-2)

3.16. Weight and Balance Documentation.

3.16.1. Flying units will maintain an electronic or hardcopy weight and balance book within flight planning areas. (T-3) As a minimum the book will contain:

3.16.1.1. DD Form 365 – *Record of Weight and Balance Personnel*, or appointment letter. (T-3)

3.16.1.2. DD Form 365-1 *Chart A – Basic Weight Checklist Record*, current for each assigned aircraft. (T-3) The Chart A is not required if maintained by maintenance in a separate weight and balance book.

3.16.1.3. DD Form 365-2 *Form B – Aircraft Weighing Record*, current for each assigned aircraft. (T-3) The Form B is not required if maintained by maintenance in a separate weight and balance book.

3.16.1.4. DD Form 365-3; *Chart C – Basic Weight and Balance Record* for each assigned aircraft. (T-3) If using an approved electronic weight and balance system that references current Chart C data from a centralized database, current Chart C for each aircraft are still required to be kept in the weight and balance book. Ensure the database accurately reflects the current Chart C.

3.16.1.5. Blank DD Forms 365-4; *Transport/Tactical Weight and Balance Clearance Form F* may be maintained in an alternate location and/or electronically, procedures will be documented in accordance with **Chapter 8**.

3.16.1.6. TO 1H-60(H)G-5-WA-1, *Basic Weight Checklist and Loading Data*, including sample Chart A. (T-3) May be maintained in an alternate location and/or electronically, procedures will be documented in accordance with **Chapter 8**.

3.16.2. Weight and balance will be computed by one of two methods: manually or by utilizing the Automatic Weight and Balance System (AWBS). The most current version of AWBS can be found at the following website: <https://awbs.hill.af.mil>. The use of an electronic program other than AWBS requires certification in accordance with TO 1-1B-50-WA-1, *Aircraft Weight and Balance* prior to use.

3.16.3. Canned DD Form 365-4 use is authorized for all operations provided aircraft load/configurations do not change. Canned Form F's will be reviewed every 14 days. (T-3)

3.16.4. A new or corrected DD Form 365-4 need not be recomputed provided the initial takeoff gross weight is not changed by more than 500 pounds. Although no written adjustments are required, a SMA will review changes in gross weight, zero fuel weight, and center of gravity and the AC will ensure limits are not exceeded. (T-2)

3.16.5. Prior to flight, the AC will verify basic weight and moment on the completed DD Form 365-4 Form F matches the Chart C maintained by maintenance on the aircraft. (T-2) File a signed copy of the completed DD Form 365-4 with the flight authorization, or controlling ground agency when away from home station, and a copy on the aircraft for the duration of the mission.

3.17. Aircraft Equipment/Configuration. Reference Department of the Air Force Instruction (DAFI) 21-103, *Equipment Inventory, Status and Utilization Reporting*, and MAJCOM supplement for minimum essential subsystem list.

3.17.1. Aircraft will not be modified to secure, and/or install equipment, unless authorized by aircraft technical orders or Department of Defense Instruction (DODI) 5000.02, *Operation of the Adaptive Acquisition Framework*. (T-1)

3.17.2. MAJCOM/A3 or COMAFFOR approval is required to remove the SMA seats.

3.17.3. Operations (not to include HAAR) with the cockpit doors removed is restricted to combat/contingency operations, and training sorties with OG/CC approval. OG/CC may delegate this authority no lower than the SQ/CC. **Warning:** Ensure cockpit equipment is secured to preclude inadvertent dropped objects and resultant damage to the aircraft or injury to the crew and ground personnel.

3.18. Degraded Systems/Equipment. The final responsibility regarding equipment required for a flight rests with the AC. If one AC accepts an aircraft to operate a mission, or mission segment, with a degraded or inoperative item or system, this acceptance does not commit that AC, or a different AC, to subsequent operations with the same item or system inoperative. If the AC elects to operate with degraded equipment or aircraft systems, coordinate mission requirements (e.g., revised departure times, fuel requirements, maintenance requirements), prior to flight with the mission control agency to ensure the decision does not adversely impact follow-on missions.

3.18.1. Operations will not be conducted with any malfunction of the main fuel tank quantity or warning systems. **Exception:** Life or death missions. In this case, the fuel tank involved will be fully serviced and visually checked prior to flight.

3.18.2. Malfunctions of the Enhanced Fuel Quantity Indicator (EFQI) system do not restrict the crew from flying the aircraft. However, if mission requirements dictate the use of auxiliary fuel with a malfunctioning EFQI, the auxiliary tank must be visually checked prior to takeoff, and the transfer of auxiliary fuel must be monitored to preclude damaging the auxiliary fuel transfer pumps.

3.19. Cockpit Voice/Flight Data Recorder. If an aircraft modified with the Integrated Vehicle Health Management Unit is involved in a mishap or incident, after landing and terminating the emergency, aircrew should pull the cockpit voice flight data recorder power circuit breaker.

3.20. Tool Kits. A tool kit will be on board for all flights departing the local training area (or traffic pattern during contingency operations). (T-3) As a minimum, the kit will include enough tools to remove and install chip detectors. (T-3) Tool kits will have an inventory list for accountability and will be sealed. (T-3) If the seal is broken, a crew member will inventory the kit and sign the accountability list prior to the next flight. SQ/CCs will designate the OPR responsible for resealing tool kits. (T-3) Units will provide and track locally developed training for aircrew to remove and install chip detectors. (T-3)

3.21. Publications Required for Flight. Publications must be onboard the aircraft prior to departure either on an aircrew EFB or in a publication kit. (T-2) Units will tailor the contents to meet local requirements. (T-3) At a minimum, the publications will contain items identified in **Table 3.1**. (T-2) Aircrew EFBs are restricted to those approved by MAJCOM and will be operated in accordance with MAJCOM guidance. (T-2)

Table 3.1. Publications.

PUBLICATION	FORMAT
TO 1H-60(H)G-1 & 1H-60(H)G-1-1	Electronic or Hardcopy
TO 1H-60(H)G-5	
NATO Standard ATP-3.3.4.1 Prelims, Chapters 1 & 3, Standards Related Document Prelims, Chapters 1, 3, & 7	
AFMAN 11-202V3	
AFMAN 11-2HH-60GV3	
DoDM 4140.25, Vol 3, <i>DoD Management of Energy Commodities: Fuel Cards</i>	
IFR and VFR Supplement	
Flight Information Handbook	
Enroute Low Altitude Charts for areas of operation	
Low Altitude Instrument Approach Procedures for areas of operation	
Maps/Charts (Sectionals) for areas of operation	

3.22. Cargo/Equipment. The AC is the final authority for cargo/equipment that is brought onto the aircraft. Items requiring frequent access weighing less than 200 pounds may be secured with seat belts, lanyards, or carabineers that are designed and rated for the restraint of personnel or cargo.

3.23. Water Operations.

3.23.1. Conduct water training a minimum of 100 meters offshore. **(T-3)**

3.23.2. An operable radar altimeter at both pilot stations is required for water operations. **(T-3)**

3.23.3. Identify all exits, door handles, and emergency release handles/straps with a low intensity ChemLight® during NVG water operations or extended night overwater flight.

3.23.4. NVG water operations and live water operations (actual deployment of personnel) require coverage by a boat, hoist equipped helicopter, helicopter capable of deploying Guardian Angel (GA) and/or a life raft or H/K/MC-130 rigged for deployment of the MA-1 or MA-2 (or equivalent) survival kit or Rigging Alternate Method Zodiac. **(T-3) Exception:** Emergency situations/life or death missions may launch single ship without coverage with OG/CC approval. The aircraft will have a life raft positioned for immediate deployment, flight following by a controlling agency, and should have an operable Improved Altitude Hold and Hover Stabilization System (IAHHS). **(T-3)**

3.23.5. Single ship day water operations require that a controlling agency know the specific location for water operations, number of personnel on board and expected completion time prior to commencing. Line of sight communications is not required during actual water operations. Notify the controlling agency upon completion.

3.23.6. Hoist extraction devices will be readily accessible prior to helocast deployments. (T-2)
Complete required rescue hoist checklists prior to final approach for hoist infiltration or exfiltration.

Chapter 4

NORMAL OPERATING PROCEDURES

4.1. Checklists. Accomplish all flight manual checklists using the “Challenge-Response” (C-R) method for normal checklist procedures, and the “Challenge-Response/Response” (C-R/R) for emergency procedure checklists. **(T-1)**

4.2. Crew Duties and Responsibilities.

4.2.1. Change of aircraft control. Pilots will use a statement that includes the crew position such as “Pilot/Copilot has controls” to transfer control. **(T-1)** The other aircrew member will acknowledge using the crew position, “Pilot/Copilot has controls.” **(T-1)** Any crew member who is in doubt as to which pilot is controlling the aircraft should immediately query.

4.2.2. The right SMA is the primary member responsible for flight manual checklist execution.

4.2.3. When training/re-currency is being conducted in the cabin, the instructor or flying supervisor will not be used as a primary scanner on the opposite side of the aircraft. **(T-2)**

4.2.4. Boldface. The pilot not flying is the primary crew member responsible for executing BOLDFACE (except those items which require manipulation of flight controls) and emergency checklist procedures while the pilot flying maintains aircraft control and reacts appropriately. All throttles, T-handles, switches and fuel selectors will be confirmed prior to being actuated and appropriate checklists will be referenced for guidance during the emergency. **(T-1)**

4.3. AFTO Form 781 Series, Aerospace Vehicle Forms.

4.3.1. Review the AFTO Form 781 series (aircraft forms) before applying power to the aircraft or operating aircraft systems. **(T-1)**

4.3.2. Ensure that the Aviation Into-plane Reimbursement (AIR) card and/or other authorized method of payment are aboard the aircraft.

4.3.3. The exceptional/conditional release will be signed before flight. **(T-1)** When designated maintenance personnel are not available the AC is authorized to sign the exceptional release.

4.3.4. Authority to Downgrade or Clear a Red X. The AC or SMA normally are not authorized to downgrade or clear a Red X. If a situation is encountered where the aircraft is on a Red X, and designated maintenance personnel are not available, reference TO 00-20-1-WA-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*, for requirements to clear and/or downgrade the Red X condition.

4.4. Seat Belt Use.

4.4.1. Seat belts and shoulder harnesses will be worn by both pilots when engines are operating. **(T-1)** **Exception:** During rotor turning ground crew changes, alert scramble runup, and extended ground operations a minimum of one pilot will be strapped in and will monitor the controls at all times. **(T-1)**

4.4.2. Seat belts and shoulder harnesses will be worn by all crewmembers performing duties in primary crew positions during all phases of flight. **(T-1)** **Exception:** During periods when performing essential duties that preclude safe wear.

4.4.2.1. Seat belts will not be stowed or tucked into the seat in a manner that inhibits quick donning. **(T-3)**

4.4.2.2. Aircrew members will notify the AC when performing duties that preclude the use of a seat belt and upon completion of duties. **(T-3)**

4.4.3. Seat belts and shoulder harnesses will be worn by cabin occupants during practice autorotations. **(T-2)** **Exception:** Instructors and evaluators who do not have access to a multifunction operator seat and are performing duties in the cabin do not require seat belts or shoulder harnesses during practice autorotations but will use an authorized restraint device as outlined in [paragraph 4.5.4](#). **(T-2)**

4.5. Restraint Devices. The term “authorized restraint device” pertains to devices approved for use in accordance with technical orders, safe-to-fly approvals or operational safety, suitability, and effectiveness compliance. A restraint device will be worn by all personnel. **(T-1)**

4.5.1. The modified gunner’s belt (Part Number (P/N) MS16070-21/A) is the only device authorized for use with Mobile Aircrew Restraint System (MARS). Only one modified gunner’s belt will be attached per MARS device. **(T-1)** The use of a carabineer or extension between the modified gunners’ belt and MARS is not authorized. **(T-1)**

4.5.2. Secondary restraint device attachment points will be the cabin cargo tiedown fittings or Crew Overhead Restraint System cables. **(T-3)** A maximum of two restraint devices may be attached per cargo tiedown ring. The use of a locking/auto-locking carabineer is authorized and will have a minimum force rating of 5,000 pounds or 23 kilonewtons (kN). **(T-1)**

4.5.3. When use of standard seating is not possible due to mission requirements, personnel will be secured using an authorized restraint device. **(T-1)** Passengers will be secured regardless of door position, except when tactically not feasible. **(T-1)** **Warning:** Not using a seat belt or restraint device for cabin occupants increases personal injury in the event of an emergency where ground impact and/or aircraft rollover occurs.

4.5.4. Alternate loading allows equipment not required for the mission to be removed and the cabin floor itself becomes a seat. Use the following order of preference to restrain alternate loaded personnel:

4.5.4.1. Authorized restraint device. **(T-3)**

4.5.4.2. Seat belts attached to tie down rings on cabin floor. **(T-3)**

4.5.4.3. Five thousand (5,000) pound tie-down straps attached to tie down rings on cabin floor. **(T-3)**

4.5.4.4. Close cabin doors. This method is used as a last resort. Cabin doors will remain closed any time unrestrained personnel are in the cabin. **(T-3)**

4.5.5. Restraint devices will be properly adjusted to prevent personnel from inadvertently exiting the aircraft and to the minimum length required for completing mission essential tasks. **(T-1)** **Warning:** An improperly adjusted restraint device may result in injury or loss of life. Accidental exit from the helicopter is possible when adjusted for mission essential tasks.

4.5.6. Restraint devices are not removed until after landing. **(T-1)** **Exception:** AIE operations. Exit only when cleared by the AC.

4.6. Aircraft Lighting.

4.6.1. Aircraft may be flown with one strobe light inoperative.

4.6.2. Aircraft may operate in restricted areas and warning areas with reduced lighting in accordance with AFMAN 11-202V3 and Federal Aviation Administration or host nation exemptions. ACC units reference the Air Combat Command Standardization and Evaluation Branch (ACC/A3TV) SharePoint® site: <https://usaf.dps.mil/sites/ACC-A3/A3T/A3TV/SitePages/Home.aspx> for aircraft lighting waivers.

4.6.3. HH-60Gs not operating in a warning/restricted area or under a waiver will operate with the following lighting configurations:

4.6.3.1. Single Ship Operations. Overt position lights and at least one strobe light. **(T-2)**

4.6.3.2. Formation Operations. The lead aircraft will operate with overt or IR position lights, strobe light usage is optional. **(T-2)** The wingman or last aircraft in the formation will operate with overt position lights and one strobe light. **(T-1)**

4.6.3.3. For combat operations, aircraft lighting will be commensurate with mission requirements, SPINS, and local requirements. **(T-2)**

4.7. Aircraft Taxi Restrictions. Aircrew will abide by taxi distances and restrictions per AFMAN 11-218, *Aircraft Operations and Movement on the Ground*, and will not taxi an aircraft within 25 feet of obstructions without wing walkers and no closer than 10 feet with wing walkers unless exempted or waived. **(T-2)**

4.7.1. When taxi clearance is doubtful, use a wing walker. If wing walkers are unavailable or if provided and doubt still exists as to proper clearance, deplane a crew member to maintain obstruction clearance.

4.7.2. Maximum ground taxi speed: 15 knots ground speed (KGS). **(T-2)**

4.8. Rotor Turning Ground Operations:

4.8.1. An aircrew member will escort passengers and/or MEP not familiar with helicopter operations through the safe approach zone (3 or 9 o'clock position) when obstacle clearance permits. **(T-3)**

4.8.2. Rotor turning crew changes are authorized. The new crew will review aircraft forms, weight and balance, TOLD, and complete required flight manual checklists. **(T-2)** If the crew change is accompanied with a maintenance line change, the departing crew should accomplish an Integrated Vehicle Health Monitoring System (IVHMS) "End of Operations."

4.9. Helicopter Maneuvering. Any time the aircraft exceeds the maximum sustainable angle of bank for the current conditions, the pilot flying (or any crew member noticing the condition) will announce "overbank." The pilot flying will ensure bank angle is adjusted to prevent descent below minimum altitudes.

4.10. Aircraft Refueling. When not directly involved in the refueling operation, personnel will remain clear of the fuel servicing safety zone. **(T-3) Exception:** Approved hot refueling/forward area refueling point (FARP)/contingency operations. Do not taxi another aircraft within 50 feet of a refueling operation. **(T-3)**

4.10.1. Aircrew members certified in hot refueling may perform cold refueling duties. At locations with refueling support, aircrews will not refuel except in isolated cases when maintenance support is not readily available, and the mission would be delayed.

4.10.2. The AIR Card is used to pay for services at commercial fixed base operators. These include aviation fuel, aircraft oil and fluids or other minor maintenance items. The AC is responsible for ensuring the receipt is correct and all appropriate signatures are obtained before departing the fixed base operators. Receipts will be turned in to maintenance debrief upon mission completion. **(T-3)**

4.10.3. Conduct hot refueling in accordance with AFI 11-235, *Specialized Fueling Operations*, TO 00-25-172-WA-1, *Ground Servicing of Aircraft and Static Grounding/Bonding*, and appropriate flight manuals. **(T-2)** The left cabin door, left gunner window, and left cockpit door/window (if installed) will be closed while refueling unless prohibited by mission essential equipment. **(T-3)**

4.11. Forced or Precautionary Landings. If the AC becomes doubtful of the helicopter's airworthiness or encounters hazardous weather conditions, a precautionary landing should be accomplished. When applicable reference [paragraph 4.3.4](#) regarding authorities to clear a Red X condition. In the event a forced or precautionary landing occurs at a location where communications are not available, the following procedures apply:

4.11.1. If the AC determines the aircraft is not safe for flight, remain at the landing site and await assistance. **(T-3)** **Exception:** Contingency operations will be directed by SPINS. **(T-3)**

4.11.2. If the AC determines the aircraft is safe for flight, the AC may authorize a flight to reposition the aircraft to a suitable location for corrective maintenance accessibility or to a location where communications can be established. **(T-3)**

4.11.3. If the precautionary landing was made for weather and the aircraft is safe for flight, the flight may be continued once the hazardous weather condition has passed.

4.12. Power Computations. For unknown or predicted site conditions, power computations will not consider wind effects.

4.12.1. Power available and power required will be calculated using the control display unit (CDU) (or approved automated programs). **(T-3)** It will be briefed prior to final approach at sites where terrain, environmental, or aircraft configuration/conditions are less favorable than the previous site. **(T-2)**

4.12.2. When conducting multiple approaches to the same area, power available and power required will be briefed for the maneuver that provides the smallest power margin. **(T-2)**

4.12.3. When the anticipated power margin is 10% or less, a second aircrew member will reconfirm power computations. **(T-2)** One crewmember will utilize the CDU and the other will utilize flight manual performance charts or approved automated programs in accordance with [paragraph 3.15.1](#) to provide two sources of TOLD.

4.12.4. When the anticipated power margin is 10% or less, use of the contingency power switch will be briefed prior to commencing the intended operation. **(T-2)** The use of contingency power for pre-mission and in-flight planning purposes is prohibited. Power available will be computed using 10-minute power available regardless of contingency power switch setting.

4.12.5. Landing Zone Power Requirements.

4.12.5.1. Pinnacle or Ridgeline. Power for an out of ground effect (OGE) hover must be available when landing to a surface area smaller than the rotor diameter, such as a pinnacle or ridgeline. **(T-2)**

4.12.5.2. Clear Escape Route. A clear escape route is one wherein no obstacles would impede a go-around or a departure from an LZ using no more power than that required to hover.

4.12.5.2.1. Training. Power available must be equal to or greater than power required for the intended hover height (no less than 10 feet) + 5%. **(T-2)**

4.12.5.2.2. Operational. Power available must be equal to or greater than the power required for the intended hover height. **(T-2)**

4.12.5.3. Restricted Escape Route. A restricted escape route is one with obstacles that require using more power than that required to hover while executing a “go-around” or departure from an LZ.

4.12.5.3.1. Training. Power available must be equal to or greater than OGE hover power + 5%. **(T-2)**

4.12.5.3.2. Operational. Power available must be equal to or greater than OGE hover power. **(T-2)**

4.12.5.4. Water Operations.

4.12.5.4.1. Training. Power available must be equal to or greater than OGE hover power + 5%. **(T-2)**

4.12.5.4.2. Operational. Power available must be equal to or greater than OGE hover power. **(T-2)**

4.12.5.5. Restricted Visibility Operations. A restricted visibility approach is an approach where the crew anticipates losing ground references due to sand, dust, snow, or any other obscuration during any portion of the approach and landing.

4.12.5.5.1. Training. Power available must be equal to or greater than OGE hover power + 5%. **(T-2)**

4.12.5.5.2. Operational. Power available will not be less than 10 foot hover power + 5%. **(T-2)** If the LZ has a restricted escape route, OGE power must be available. **(T-2)**

4.13. Non-Surveyed/Unprepared Landing Zone Procedures. Perform a high and low reconnaissance when landing to non-surveyed or unprepared landing zones. **(T-2) Exception:** Operational/Exercise Combat Search and Rescue missions. For exercises, ensure compliance with [paragraph 3.8.2](#) of this manual and, if conditions permit, terminate the approach to a hover and clear the area beneath the helicopter prior to touchdown.

4.13.1. High Reconnaissance. Accomplish the high reconnaissance at an altitude that allows adequate survey of the intended area. In no case will the aircraft descend below 150 feet above site elevation (ASE) and 50 knots indicated airspeed (KIAS) during the high reconnaissance maneuver. **(T-2)**

4.13.2. Low Reconnaissance. Accomplish a low reconnaissance at a minimum of 50 feet AHO along the flight path at a minimum of 50 KIAS or SEAS, whichever is greater. (T-2) At the pilot's discretion, the low reconnaissance may be performed on final approach if OGE power is available.

4.14. Unaided Night Approaches.

4.14.1. For approaches to unlit surfaces, brief and conduct an area and site evaluation in accordance with [paragraph 4.13](#) prior to beginning the approach.

4.14.2. The low reconnaissance will not be conducted. (T-2)

4.15. Sling Load Operations. Avoid over flight of personnel, buildings, and equipment to the maximum extent possible.

4.16. Prohibited/Restricted Procedures/Maneuvers.

4.16.1. The following procedures/maneuvers are prohibited during training:

4.16.1.1. Actual engine shutdown in-flight. (T-1)

4.16.1.2. Deliberately entering vortex ring state or power settling. (T-1)

4.16.1.3. Dual Digital Electronic Control (DEC) malfunctions. (T-1)

4.16.1.4. Intentional removal of primary aircraft power inflight. (T-1)

4.16.2. DEC lockout actuation will not be performed outside of FCF (or FCF training), operational check flights, emergency procedure training, or actual emergencies. (T-1)

4.17. Contact Training.

4.17.1. A minimum 10-foot AGL main wheel clearance will be used for all contact hovering maneuvers. (T-2)

4.17.2. Takeoffs.

4.17.2.1. Marginal Power Takeoff. Initiate from the ground or hover using a target torque value of 10 foot hover power and a simulated 50 foot vertical obstacle. Terminate the maneuver when clear of the simulated obstacle and above safe single engine airspeed (or 80 KIAS if SEAS is not available).

4.17.2.2. Maximum Performance Takeoff. Initiate from the ground or 10-foot hover using a target torque value of OGE + 5% or as specified by the Instructor Pilot/Evaluator Pilot and a simulated 100-foot obstacle. Terminate the maneuver when clear of the simulated obstacle and above safe single engine airspeed (or 80 KIAS if SEAS is not available).

4.17.2.3. Rolling Takeoff. Initiate from the ground using a target torque value of 10% below 10 foot hover power. Terminate the maneuver when above safe single engine airspeed (or 80 KIAS if SEAS is not available).

4.17.3. Traffic Pattern. The following will be used to the max extent practical during contact proficiency training. Downwind legs will be flown at 500 feet AGL and 100 KIAS. During the turn to base, descend to 300 feet AGL and slow the aircraft to 80 KIAS.

4.17.4. Approaches.

4.17.4.1. Normal Approach. Initiate from 300 feet AGL and 80 KIAS using a 30 degree apparent angle. Terminate on the ground or in a hover.

4.17.4.2. Shallow Approach. Initiate from 300 feet AGL and 80 KIAS using a 10 degree apparent angle. Terminate on the ground or in a hover.

4.17.4.3. Steep Approach. Initiate from 300 feet AGL, 50 KGS, and a 45 degree apparent angle. Terminate on the ground or in a hover.

4.17.4.4. Roll-on Landing. Use an entry airspeed no less than SEAS or 70 KIAS if SEAS is not available. Maximum touchdown speed is 60 KGS.

4.18. Emergency Procedure Training. Emergency Procedure training will be conducted with an IP in command and at a set of controls. **(T-2) Exception:** SQ/CCs may designate MPs to conduct EP sorties without an IP at a set of controls, but MPs must fly with a pilot current in the event. **(T-2)**

4.18.1. Accomplish emergency procedures to runways, taxiways, helipads, or other areas approved by the SQ/CC and identified in the local **Chapter 8**.

4.18.2. Single-Engine Training. Use an entry airspeed no less than safe single engine airspeed or 70 KIAS if safe single engine airspeed is not available, and artificially limit torque available on both engines. Maximum touchdown speed is 60 KGS. **Note:** When torque available is limited by actual throttle manipulation, the landing area should be a prepared area and provide ample room for a roll-on landing. Initiate no lower than 300 feet AGL, 80 KIAS.

4.18.3. The following maneuvers will be practiced by artificially limiting torque available on both engines versus reducing torque available through throttle manipulation.

4.18.3.1. Single-Engine Helicopter Air-to-Air Refueling.

4.18.3.2. Single-Engine approaches to a spot (min-roll).

4.18.4. Stabilator Malfunctions. Do not initiate a stabilator malfunction when the aircraft attitude is greater than 10 degrees nose low. Do not exceed the flight manual stabilator placard limits when manually slewing the stabilator.

4.18.5. Boost/SAS-OFF. Initiate on the ground or in straight and level flight at a minimum of 300 feet AGL and 80 KIAS.

4.18.6. Digital Electronic Control (DEC) Lockout. Initiate on the ground or in flight at a minimum of 300 feet AGL and 80 KIAS.

4.19. Practice Autorotations. Accomplish in VMC.

4.19.1. Throttles will remain in fly. **(T-1)**

4.19.2. Aircraft heading will be no greater than 45 degrees from the wind direction when winds exceed 15 knots and no greater than 90 degrees from the wind direction when winds are 15 knots or below. **(T-2)**

4.19.3. Minimum entry altitudes:

4.19.3.1. Straight ahead to 90 degrees: 500 feet AGL.

4.19.3.2. Greater than 90 degrees: 800 feet AGL.

4.19.3.3. Low altitude autorotation: 100 feet AGL.

4.19.3.3.1. Low-level checklist is not required.

4.19.3.3.2. Descend from normal pattern to low altitude autorotation pattern no earlier than abeam the intended termination point.

4.19.3.3.3. Minimum entry airspeed is 80 KIAS and rotor revolutions per minute (N_R) within limits.

4.19.3.4. Maximum offset angle from intended termination point is 30 degrees.

4.19.4. The aircraft must be wings level, have a minimum of 80 KIAS, N_R within limits, and be aligned for landing/recovery heading at no lower than 150 feet AGL. **(T-2)** If any of these conditions are not met, initiate a power recovery immediately. The wings level requirement does not prohibit minor heading corrections on final.

4.19.5. Initiate a power recovery if any of the following are experienced: Excessive sink rate, N_R is outside of briefed parameters, ineffective flare maneuver, or a touchdown might occur.

4.19.6. Terminate no lower than 15 feet AGL and a maximum speed of 30 KGS.

4.19.7. Night autorotations require an IP in command and at a set of controls.

4.19.7.1. All crew members must be aided by NVGs. **(T-2)**

4.19.7.2. Illumination must be at or above 40% to conduct night autorotations to an unlit surface. **(T-2)**

4.20. Unusual Attitude Training. Accomplish after morning civil twilight and prior to evening civil twilight in VFR conditions and only when an IP/EP is in command and at a set of controls. Initiate at or above 1,000 feet AGL. Do not exceed 30 degrees of bank, 20 degrees nose high attitude, or 10 degrees nose low attitude.

4.21. Aircraft Handling Characteristics. Use applicable AFTTP 3-3.HH-60G energy maneuvering charts to compute requirements for each maneuver. Onset of blade stall must be computed using the blade stall chart in the flight manual. **(T-2)** AHC maneuver parameters are found in AFTTP 3-3.HH-60G.

4.21.1. AHC sorties will only be accomplished after morning civil twilight and prior to evening civil twilight, in VFR conditions, and will only be conducted when an Instructor Pilot (IP)/Evaluator Pilot (EP) is in command and at a set of controls. **(T-2)**

4.21.2. Except as noted below, maneuvers will be entered from a minimum of 1,000 feet AGL and recovery completed no lower than 500 feet AGL. **(T-1)** AHO is measured along the flight path.

4.21.2.1. Pitch Up. Enter at a fixed cruise power setting at a minimum of 500 feet AGL.

4.21.2.2. Pitch Down. Enter from straight and level flight at 60-80 KIAS and at a minimum of 1,500 feet AGL.

4.21.2.3. Overbank. Enter at a minimum 1,500 feet AGL.

4.21.2.4. Right Hand Roll Characteristics Demonstration. Enter at a minimum 1,500 feet AGL.

4.21.2.5. Two-Step Climbing Turn. Enter at a minimum of 500 feet AGL.

4.21.2.6. Course Reversal. Enter at a minimum of 500 feet AGL.

4.21.2.7. Low-Level AHC Maneuvers. Bunt, transient torque, acceleration to maximum turn rate, enroute maximum turn rate, enroute maximum displacement turn, and simulated counter to the pitch-back attack will all be initiated at a minimum of 100 feet AHO and recovered no lower than 100 feet AHO. **(T-1) Exception:** Hovering transient torque pedal application and acceleration to maximum turn rate may be initiated below 100 feet AHO. Maneuvering during acceleration to max rate will be delayed until above 100 feet AGL.

4.21.2.8. Low Altitude Deceleration training will be accomplished to open prepared surfaces (runway or taxiway) or surveyed LZs. **(T-2)**

4.21.2.8.1. OGE hover power + 5% is required.

4.21.2.8.2. Do not perform this maneuver with a tail wind condition.

4.21.2.8.3. Initiate at a minimum of 80 KIAS and 50 feet AHO. Terminate no lower than 50 feet AHO. **(T-1)** At no time will any part of the helicopter be below 50 feet AHO.

4.21.3. The following formation maneuvers do not require aircrew to have a BHM certification: Head-to-Head Level Turn (One-Circle and Two-Circle), Pitch-Back Attack, Counter to the Pitch-Back-Attack, and Counter to the Pitch-Back Attack (Defensive). AFI 11-214, *Air Operations Rules and Procedures*, Air-to-Air training rules apply with the LIMITED maneuvering category being the maximum for non-BHM certified formations. Formations will conduct a 500-foot bubble check prior to executing these maneuvers. **(T-2)**

4.22. Maintenance Debriefing. The AC (or designated aircrew member) will debrief maintenance personnel on the condition of the aircraft and equipment. **(T-3)** Make the following entries in the AFTO Form 781A when appropriate:

4.22.1. "Engines subjected to salt spray at ____ feet."

4.22.2. "Hoist used in salt water/for live operations or for non-live operations."

4.22.3. "Aircraft exposed to salt air at ____ miles/____ feet." (Required when flown within 10 miles of saltwater or flight below 3,000 feet AWL).

4.22.4. "Aircraft conducted ____ brown out landings."

Chapter 5

INSTRUMENT PROCEDURES

5.1. Simulated Instrument Flight. Vision restricting device use is prohibited in the HH-60G.

5.2. Advisory Calls. The pilot not-flying will make the following advisory calls to the pilot-flying at a minimum:

5.2.1. During Descent: **(T-2)**

5.2.1.1. 300 feet and 100 feet above assigned altitude. **(T-2)**

5.2.1.2. 300 feet and 100 feet above initial approach fix or holding altitude. **(T-2)**

5.2.2. During Non-precision Approaches:

5.2.2.1. 100 feet above minimum descent altitude.

5.2.2.2. “Minimums” Called at the minimum descent altitude.

5.2.2.3. “Runway in sight” called when sufficient visual reference (per AFMAN 11-202V3) with the runway environment is established and the aircraft is in a safe position to land.

5.2.2.4. “Go-Around.” called at the missed approach point when visual reference with the runway environment is insufficient to continue the approach or any time the approach becomes unsafe.

5.2.3. During Precision Approaches:

5.2.3.1. 100 feet above decision altitude (DA).

5.2.3.2. “Land” Called at the DA or following a “Continue” call if visual reference with the runway environment has been established (to include red side row/red termination bars) or the aircraft is in a position to execute a safe landing.

5.2.3.2.1. “Continue” Called at the DA when sufficient visual reference with the approach lighting system has been established. Do not descend below 100 feet above the touchdown zone elevation using the approach lights as the sole reference unless the red termination bars or the red side row bars are also visible and identifiable, and the aircraft is in a safe position to land. Aircrew must be aware of the approach lighting system type prior to executing the approach.

5.2.3.3. “Go-Around” Called at the DA or following a “Continue” call if visual reference with the runway environment has not been established (to include the red side row/red termination bars) or the aircraft is not in a position to execute a safe landing.

5.2.4. During Climbs: 300 feet and 100 feet below assigned altitude.

5.2.5. During All Phases of Instrument Procedures: Any aircrew member observing unannounced heading deviations of 10 degrees, airspeed deviations of 10 knots, altitude deviations of 100 feet, and potential terrain or obstruction conflicts will immediately advise the pilot flying. **(T-2)** Announce deviations from prescribed procedures for the approach being flown.

Chapter 6

MISSION EMPLOYMENT

6.1. Low-Level Operations.

6.1.1. Accomplish AFMAN 11-2HH-60V3, CL-1, Low Level Checklist prior to conducting low-level operations. Subsequent landings to the same area do not require a Low Level Checklist and BEFORE LANDING checklist if the configuration in the checklists do not change, even if the aircraft ascends out of the low-level environment.

6.1.2. Pilots will ensure the entire crew and deploying personnel are updated on the status of the flight and advised of events that impact the mission and their duties. **(T-2)** As a minimum, alert the crew and deploying personnel at 20 minutes, 10 minutes, 5 minutes, and 1 minute prior to the objective. **(T-3)**

6.1.2.1. Aircrew will make crew advisory calls prior to all turns and will continuously clear the flight path throughout the turn. **(T-1)**

6.1.2.2. If a break is required to the opposite side of the scanner calling the break, the opposite scanner is responsible for immediately clearing the aircraft and calling "Clear Left/Right" or "Stop Turn Left/Right" and subsequent corrective action such as "Climb" or "Descend".

6.1.3. Flight lead/ACs are responsible for ensuring that planned threat reaction maneuver training takes into account aircraft performance, environmental conditions, formation spacing, and crew/flight experience. Do not conduct enroute evasive maneuver training below 100 feet AGL/AWL. **(T-2)**

6.1.4. Tactical low-level approaches will only be flown during tactical training missions and operational missions. **(T-2)** Conduct combat rescue terminal operations in accordance with AFTTP 3-3.HH-60G and AFTTP 3-1.HH-60G *Combat Aircraft Fundamentals HH-60G (S)*. **(T-2)**

6.1.5. Unknown Position. During training, if unable to establish aircraft position, climb to a safe altitude and reorient the crew's position before resuming low-level navigation.

6.2. Formation.

6.2.1. Formation Responsibilities. Unless briefed otherwise, formation lead will direct and two will set the formation. **(T-2)** Lead changes should only be directed by flight lead.

6.2.2. The minimum separation between the closest portions of any two helicopters in a formation is one rotor diameter. Rotor disk separation will be based on the largest rotor disk diameter. **(T-2)** Maximum formation separation is based on environmental conditions, visibility, illumination, crew experience, threat situation, and mission requirements.

6.2.3. Taxi aircraft with a minimum of 100 feet spacing from main rotor to tail rotor. **(T-2)**

6.2.4. Radio communication between formation aircraft is required. **(T-1)**

6.3. Tactical Formation Maneuvering. There are three methods of deconflicting aircraft during formation maneuvering or when integrating with other formation elements or players: lateral separation, timing separation, and altitude separation. The usage of geographic reference points to

achieve lateral separation, implementing timing separation contracts, or utilizing altitude separation contracts and/or blocks are all acceptable means of applying methods of deconfliction. Usage of non-visual means of station-keeping, such as Air-to-Air Tactical Air Navigation (TACAN) or datalink, provides a mechanism to monitor deconfliction between aircraft or different formation elements, but are not deconfliction themselves. Additional restrictions on tactical formation maneuvering:

6.3.1. Flight leads will brief a deconfliction plan that utilizes at least one method of deconfliction for all formation operations and should implement at least two methods of deconfliction between known participating aircraft outside of their formation (e.g., establish altitude blocks with F-35 escort; or timing deconfliction with A-10 Sandy's in the objective area).

6.3.2. When flying in formation with less than 3-rotor disks separation, the only authorized tactical formation maneuvers are: shackle, split, cover, and dig.

6.4. Night Formation Maneuvering Restrictions. Restrictions below apply when relying solely on visual means to monitor aircraft deconfliction and determine formation aspect and closure rates relative to the other aircraft.

6.4.1. Center and cross turns will not be accomplished at night. **(T-1)**

6.4.2. When conducting tactical formation maneuvering at night, roll out headings will be called during break, split, hook, and tac turns. **(T-2)**

6.4.3. Enroute formation spacing, and aspect angle may be increased beyond the restrictions listed in [paragraph 3.10](#) provided:

6.4.3.1. Non-visual station-keeping means are used to augment formation visual station keeping or, procedural separation plans are briefed that ensure adequate aircraft deconfliction.

6.4.3.2. Deconfliction plans utilizing non-visual augmentation tools must account for system limitations (e.g., data link update rates, TACAN terrain bounce errors) through redundant system/technique usage. **(T-2)**

6.4.4. While over featureless terrain or water, limit formation maneuvers to those necessary for mission accomplishment.

6.4.5. Night turning rejoins will be limited to a maximum of 20 degrees angle of bank and 80 KIAS. **(T-2)**

6.5. Dissimilar Formation. Formation flights with dissimilar aircraft are authorized when all participating aircrew members are briefed and thoroughly familiar with the other aircraft's performance and tactics. Rotor disk separation is based on the largest rotor disk diameter. MAJCOM/A3 or COMAFFOR approval is required to fly formation with non-NATO, civilian and heritage/historic aircraft.

6.6. Water Operations Restrictions.

6.6.1. During NVG water operations, do not exceed 30 degree bank angle when below 100 feet AWL.

6.6.2. Except during terminal operations, maintain a minimum of 50 KIAS.

6.6.3. The observation pass will be performed above effective translational lift and a minimum of 25 feet AWL. **(T-2)** Do not perform during NVG water operations.

6.6.4. Do not descend below 100 feet AWL until established on final.

6.6.5. Initiate climbing turns at a minimum of effective translational lift and 50 feet AWL.

6.6.6. Helocast altitude is 10 feet AWL and speed is 10 KGS. Minor deviations in altitude and airspeed are acceptable only with concurrence of the AC and deploying personnel. **Warning:** Wave height/action can make it difficult for aircrew to maintain helocast parameters, and momentary deviations should be expected. Altitude and ground speeds exceeding 10 feet and 10 knots increase the potential for injuring a swimmer, and altitudes below 10 feet increase the potential of the aircraft contacting the water. When conditions make it difficult to maintain safe parameters, the AC will evaluate mission urgency and consider the potential for other methods of swimmer deployment. **(T-2)**

6.6.7. When conducting NVG Water operations ensure all aircrew members have adequate visual references to assess aircraft position, altitude, ground speed, and drift. Any aircrew member that loses visual references will immediately bring it to the attention of the rest of the crew. **(T-2)**

6.7. General Alternate Insertion/Extraction (AIE) Procedures. USAF personnel deploying from the aircraft via AIEs must be qualified/certified or be under direct supervision of a qualified instructor or equivalent. **(T-2)** SQ/CC's (delegable to SQ/DO) will ensure joint/coalition forces personnel deploying from the aircraft are appropriately qualified/certified or are under direct supervision of a qualified instructor or equivalent. **(T-0)** **Warning:** The AC will ensure aircrew and deploying personnel are aware of the length of the devices. **(T-1)** 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 marked with yellow tape/paint and clearly distinguishable from operational equipment. **(T-3)** Only operational equipment will be used for live AIE operations. **(T-1)**

6.7.1. Units will develop a program to ensure unit-owned equipment is tracked, maintained, inspected and serviceable. **(T-2)** At a minimum, units will ensure compliance with current manufacturer procedures and requirements outlined in TO 00-25-245-WA-1, *Testing and Inspection Procedures for Personnel Safety and Rescue Equipment*. **(T-2)**

6.7.2. Mission Briefing. Prior to deployment, the AC will ensure the Alternate Insertion/Extraction Briefing is complete. **(T-2)**

6.7.3. Safetyman. During live AIE operations an aircrew member or team member will be designated as the safetyman. **(T-1)** The safetyman will monitor intercom and will be in a position to evaluate the safety of the operation(s) and take action to avert a hazardous situation. **(T-1)** During NVG operations the safetyman must ensure the AIE Master can see the appropriate hand signals. **(T-1)** **Warning:** Altitude deviations while personnel are on the ropes will have an adverse effect on their braking ability and can cause serious injury. During the hover, the safetyman must relay sufficient information (aircraft altitude, drift, obstacles, and rope position) to the pilots to ensure the ropes do not leave the ground during altitude deviations. **(T-1)**

6.7.4. AIE/Rope Master. The AIE/rope master is a deploying team member responsible for making the final determination on the safety of the operation and will be identified prior to AIE operations. During operations when the AIE master cannot safely determine operational parameters (aircraft altitude, drift, obstacles, and rope position), the AIE master will coordinate with the safetyman for assistance. **(T-1)**

6.7.5. Position non-essential equipment, and/or personnel, to prevent interference with AIE operations.

6.7.6. During live training deployments at night, ChemLights® will be used to identify all ropes. **(T-3)** ChemLights® should be used to identify all ropes during non-live training. During operational missions, ChemLight® use will be at the discretion of the deploying team leader.

6.7.7. Ropes will be released or retrieved prior to commencing forward flight. **(T-2)**

6.7.8. A cutting device will be readily available to cut ropes or AIE devices in case of emergencies or rope entanglement. **(T-2)**

6.8. AIE Deployment Procedures.

6.8.1. During fast rope, rappel, and rope ladder operations, the pilot flying will give the command “ROPES, ROPES, ROPES” when the aircraft is in a position to safely deploy the device and the team. This is the pilot’s clearance for the team to deploy. The device may be deployed on the first command “ROPES”.

6.8.2. Following the pilot’s clearance for the team to deploy and during operations where the AIE/rope master can safely determine operational parameters, the team will deploy at the discretion of the AIE/rope master.

6.9. Fast Rope Operations.

6.9.1. The deploying team is responsible for providing the ropes and assisting crewmembers in inspection and aircraft rigging. A SMA will inspect aircraft rigging prior to deployment. **(T-2)**

6.9.2. The Fast Rope Insertion/Extraction System (FRIES) bar will be extended and locked prior to final approach. **(T-3)**

6.9.3. If requested by the deploying rope master, the aircraft may have a maximum forward ground speed of 5 KGS.

6.10. Rappelling Operations.

6.10.1. Deploying personnel are responsible for aircraft rigging and personnel hookup. The deploying team is responsible for providing rappel ropes, harnesses, and rappel devices. A SMA will inspect aircraft rigging prior to deployment to ensure correct configuration. **(T-2)**

6.10.2. The primary rappelling rope attachment point is the FRIES release mechanism. A secondary safety attachment point is required for all rappelling operations and will be either an upper cargo net restraint ring, cargo tie-down ring or the opposite side FRIES release mechanism. **(T-2)** When an upper cargo net restraint ring or cargo tie-down ring is used, rappel ropes will be attached using locking/auto-locking carabineers with minimum force criteria of 5,000 pounds or 23 kN. **(T-2)**

6.10.3. Once connected to the rappelling equipment, deploying personnel may release other restraints in preparation for the exit.

6.11. Rope Ladder Operations. Warning: Use only certified rope ladders for live training. **Warning:** Failure to ensure the rope ladder is fully deployed and both rope ladder wheels are properly set could result in slippage and injury to team member.

6.11.1. The flight crew is responsible for providing, inspecting, and installing rope ladders in accordance with TO 00-25-245-WA-1. Ladders will be rolled or stacked and secured prior to flight. **(T-2) Warning:** The rope ladder will not be used for fly away extractions during training. **(T-2)** During contingencies, do not use unless threat to personnel remaining on the ground is higher than risk associated with in-flight rope ladder failure. If used in forward flight, altitude will be the absolute minimum; airspeed will not exceed 40 KIAS. **(T-2)**

6.11.2. Rope ladders will be attached to the cabin floor tiedown fittings in accordance with TO 00-25-245-WA-1. **(T-1)**

6.11.3. The maximum number of personnel on a ladder is three.

6.11.4. If mission conditions permit, close the cabin door not being used for recoveries prior to personnel entering the aircraft.

6.12. Hoist Operations. The following devices are approved: rescue basket, SKEDCO[®], Stokes litter, rescue strop, quick strop and forest penetrator. **Warning:** Failure to properly inspect, monitor, and report hoist and/or cable deficiencies may result in undetected cable damage that could result in cable failure.

6.12.1. Use of a tag line and weak link with the SKEDCO[®] litter is mandatory. **(T-2)** A tag line and weak link should be used with the stokes litter when a ground party is available. The deploying team is responsible for providing the tag line and assisting the crewmembers in inspection and aircraft rigging. **Warning:** The SKEDCO[®] litter's non-porous surface causes it to spin rapidly when exposed to rotor downwash. The SKEDCO[®] litter must be actively controlled with a taut tag line to prevent spinning.

6.12.2. A hoist cable quick splice device and V-blade knife will be readily available. **(T-2)**

6.12.3. The hoist will not be used as an anchor point for fast rope or rappel operations. **(T-2)**

6.12.4. All aircrew members must be vigilant for shock loads to the cable. If shock loading is observed, cease live hoist operations, and replace the cable prior to the next mission. **Note:** During water operations, the dynamic action of waves increases the potential for shock loading. Additionally, the increased drag of the stokes litter/personnel in the water increases the total force applied to the cable.

6.12.5. During live hoist operations, crews will evaluate potential hazards associated with live hoist operations and consider all recovery options during operational missions and exercises. **(T-2)** If the cable contacts the aircraft, operations will cease until a visual check of the cable is complete and no defects are noted. **(T-2)** Live hoist operations (training or operational) will be accomplished at the lowest altitude required to complete objectives. **(T-3)**

6.12.6. Personnel may ride the hoist with SQ/CC approval and the following:

6.12.6.1. Aircrew members and personnel current in a course that provides hoist training such as combat or water survival training: No safety observer is required. Hoist riders will

receive refresher/familiarization of devices and procedures from a qualified SMA, GA, or Survival, Evasion, Resistance, and Escape (SERE) Specialist prior to the event. (T-3)

6.12.6.2. Personnel that do not receive formal hoist training: Hoist riders will receive familiarization of devices and procedures from a qualified SMA, GA, or SERE Specialist prior to the event. (T-3) Hands-on familiarization will include rigging procedures, proper wear/use, cabin entry/exit and associated safety items as a minimum. (T-3) A safety observer trained in hoist operations will provide assistance and verify proper use/connection of devices. (T-3)

6.12.6.3. Hoist riders will wear eye protection, ear protection, and protective head gear/helmet. (T-3)

6.12.6.4. SQ/CCs or equivalent must approve lifting hoist riders above 50 feet AGL for training. (T-3)

6.12.6.5. Do not conduct live hoist training with the hoist operator's intercom inoperative. (T-1)

6.12.6.6. Do not conduct simulated hoist emergency procedure training in conjunction with live hoist training. (T-1)

6.12.7. When the hoist is used for infiltration operations, before placing the cable under any load, the hoist operator will physically verify that deploying personnel are properly configured, the hoist hook is properly connected, and the connection point is designed to support the weight of the load. (T-1)

6.12.8. Except during water recoveries, lower the stokes litter to the survivor after the helicopter is established in a hover. (T-3) For water recoveries, the stokes litter may be deployed using helocast deployment procedures.

6.12.9. A maximum airspeed of 40 KIAS may be used with the stokes deployed to prevent or stop a swinging or rotating litter, to maintain position in high winds, or over a moving vessel. During actual rescue missions, accomplish a thorough risk assessment if speeds in excess of 40 KIAS are required during stokes use, particularly when the stokes litter is empty.

6.12.10. The rescue basket may be lowered on final approach at airspeeds below 30 KIAS. While in slow forward flight for a water recovery, the 10-foot line may be allowed to contact the water prior to reaching the survivor.

6.12.11. If mission conditions permit, close the left cabin door prior to conducting live hoists.

6.13. Parachute Delivery Operations. Warning: Remove rear chaff and flare dispensers when static line operations will be performed. (T-2)

6.13.1. Mission Briefing. A thorough briefing will be conducted. All aircrew members and the jumpmaster will attend. (T-3) Ensure the briefing covers the use of restraining devices, exits, and movement in cargo compartment. When conducting operations with jumpers from other services, the procedures outlined in this manual and Training Circular (TC) 3-21.220/AFMAN 11-420, *Static Line Parachuting Techniques and Training* and AFMAN 11-411 (I), *Special Forces Military Free-Fall Operations* will be used unless different procedures are authorized by the MAJCOM. (T-1)

6.13.2. Wind Limitations for Personnel Parachute Delivery. Wind limits will be in accordance with DAFMAN 13-217 and pre-briefed by the jumpmaster. (T-1)

6.13.3. Personnel will exit the aircraft on command of a qualified jumpmaster, after clearance is received from the AC.

6.13.4. Abort Procedures. When conditions are not safe for the drop, or if the drop is aborted for any reason, the following procedures will apply: The term “Abort” will be used to alert the crew of an aborted deployment. (T-3) An aircrew member will display a closed fist to personnel not on intercom. (T-3)

6.13.5. The minimum pattern altitude is 1,500 feet AGL/AWL. Specific airspeed must be briefed prior to takeoff. (T-1)

6.13.6. Do not attach static lines until the aircraft is 1,000 feet AGL/AWL or higher. (T-1) Personnel will not release personal restraint devices until static lines are attached in accordance with operating guidance. (T-1)

6.13.7. When delivering parachutists from only one side, ensure the door on the opposite side of the cabin is closed.

6.13.8. The pilot will give 10-minute, 5-minute, and 1-minute warnings prior to reaching the drop zone. (T-2) The pilot will call 1 minute prior to drop and will announce “clear to drop” after the “safetyman check completed” response is received. (T-2) The final decision on whether or not to jump rests with the AC. The jumpmaster will acknowledge all calls from the pilot. (T-2)

6.14. Air Combat Maneuvering (ACM) Training. Helicopter ACM training against fixed wing and rotary wing aircraft is authorized. ACM training will be accomplished in accordance with guidance found within this publication, AFTTP 3-3.HH60G, and AFI 11-214. (T-1)

6.14.1. Maneuvering categories apply once within visual range of the other aircraft. All aircrew members may complete Air-to-Air training without maneuvering restrictions as long as aircraft remain beyond visual range of each other.

6.14.2. *Unlimited*. All aircrew members must be current in AHC and certified in BHM. Each crewmember must be ACM certified or receiving instruction in their respective crew position to execute in the “Unlimited Maneuvering Category” described in AFI 11-214. (T-2)

6.14.3. *Limited*. All combat mission qualified HH-60G crews may execute in the “*Limited Maneuvering Category*” restrictions described in AFI 11-214.

6.14.4. NVG Aided. All visual NVG air-to-air training requires a discernable horizon. (T-1)

6.15. Weapons Employment. Units will ensure that weapon systems employment procedures and training standards are included in the unit weapons and tactics training program. Refer to AFI 11-214, AFTTP 3-1.HH-60G, AFTTP 3-3.HH-60G, and local range procedures/restrictions for guidance. (T-2) Units will ensure that detailed local weapons employment procedures are included in their local [Chapter 8](#). (T-2)

6.16. Laser Employment. Units will ensure that laser employment procedures and training standards are included in the unit weapons and tactics training program. Refer to AFI 11-214, AFTTP 3-1.HH-60G, AFTTP 3-3.HH-60G, and local range procedures/restrictions for guidance.

(T-2) Units will ensure that detailed local laser employment procedures are included in their local **Chapter 8**. (T-2)

Chapter 7

ABNORMAL OPERATING PROCEDURES

7.1. Blind Conditions. Two conditions may result in formation aircraft losing visual contact with one another:

7.1.1. Anticipated Blind. 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 situational awareness to ensure deconfliction. Examples: Holding one aircraft in terrain while the other un.masks for line of sight to the survivor, an aircrew member sees terrain that will come between the formation and the use of non-visual means to maintain aircraft separation.

7.1.2. Unanticipated Blind. Visual cues required for formation separation no longer provide sufficient distance, aspect or closure rate cues to ensure deconfliction, or when non-visual methods do not provide sufficient situational awareness to ensure positive deconfliction. Examples: The wingman loses sight of the lead aircraft in ground lights or while maneuvering independently such as during evasive maneuvering.

7.2. Blind Procedures. In the event one or more aircraft loses visual contact within the formation during VMC, flight lead will direct a deconfliction plan using the following procedures:

7.2.1. If any flight member/element calls “Blind”, the other flight member/element will acknowledge with “Visual” and an informative position call or acknowledge with “Blind.” (T-1) If any flight member/element calls “Blind with SA” the Flight Lead directs “Continue” with heading.

7.2.2. If the other flight member/element acknowledges with “Blind,” flight lead will immediately take action to ensure separation between flight members/elements. (T-1) When unable to ensure separation using non-visual means, flight lead will direct an altitude separation of at least 200 feet and specify AGL or MSL. (T-1)

7.2.3. 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 nonvisual means. (T-1)

7.2.4. If visual contact is not regained, flight lead will take additional positive action to ensure flight path deconfliction within the flight to include a Terminate/ Knock-It-Off if necessary. (T-1) Scenario restrictions such as sanctuary altitudes and/or adversary blocks must be considered. (T-1)

7.2.5. When using visual cues as the sole means of ensuring aircraft separation, the formation will maintain altitude separation until a visual is regained or non-visual separation methods are coordinated. (T-1)

7.3. Lost Wingman Procedures. In the event one or more aircraft loses visual contact within the formation during instrument meteorological conditions (IMC), all members of the formation must react quickly and precisely to prevent a midair collision. Formation lead will initiate a breakup in accordance with the following procedures:

7.3.1. The aircraft losing contact will call, “Call Sign, Lost Wingman.” (For non-standard formations, include formation position). **(T-1)** Formation lead will immediately initiate a breakup by announcing “Call Sign, Execute” “mountainous” or “non-mountainous” (unless pre-briefed). **(T-1)** Formation lead will announce base “heading” (magnetic), base “airspeed”, base “MSA” and will maintain base parameters. **(T-1)** Wingmen will acknowledge lead’s call and take action according to formation position, the type of breakup and base information provided. **(T-1)** Once the formation executes the IMC breakup, lead will announce or brief any changes to magnetic headings, airspeed, and MSA. **(T-1)**

7.3.2. If a lost wingman call is made within the formation and visual is maintained on the preceding aircraft, maintain visual and formation position. VMC aircraft will remain VMC. **(T-1)** If visual contact is lost or aircraft enter IMC, execute lost wingman procedures from the original position in the formation.

7.3.3. If a wingman calls lost wingman and formation lead is VMC and able to ensure terrain/obstacle clearance, lead should stay VMC. Formation lead will still make base heading, base airspeed, and MSA calls for wingmen executing lost wingman procedures. Do not go IMC if VMC can be maintained.

7.3.4. Non-Mountainous Procedures (**Figure 7.1**). Execute non-mountainous lost wingman procedures in accordance with the following. **Note:** During operational situations, where the risk of actual enemy detection/engagement is greater than low altitude marginal weather operations, alternate breakup procedures may be briefed/executed.

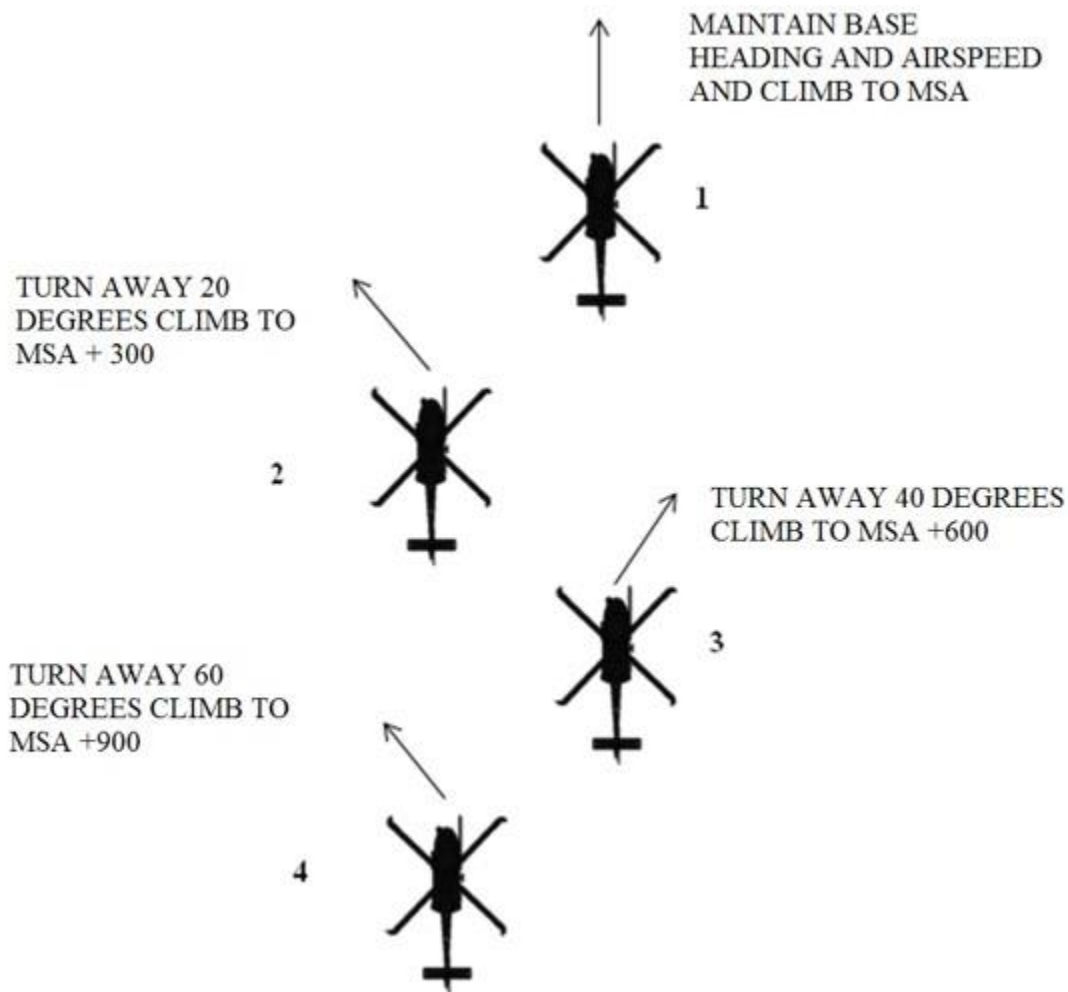
7.3.4.1. Upon the “Execute non-mountainous” call, formation lead maintains base heading, maintains base airspeed, and climbs to base MSA.

7.3.4.2. Upon the “Execute non-mountainous” call, 2 will initiate a left turn away from the preceding aircraft to a heading 20 degrees offset from the base heading and initiate a climb to MSA plus 300 feet. **(T-1)**

7.3.4.3. Upon the “Execute non-mountainous” call, 3 will initiate a right turn away from the preceding aircraft to a heading 40 degrees offset from the base heading and initiate a climb to MSA plus 600 feet. **(T-1)**

7.3.4.4. Upon the “Execute non-mountainous” call, 4 will initiate a left turn away from the preceding aircraft to a heading 60 degrees offset from the base heading and initiate a climb to MSA plus 900 feet. **(T-1)**

7.3.4.5. Once altitude is reached, maintain offset heading for 30 seconds and then return to the base heading called by formation lead during the “Execute non-mountainous” call.

Figure 7.1. Non-Mountainous Procedures.

7.3.5. Mountainous Procedures ([Figure 7.2.](#)). Execute mountainous lost wingman procedures in accordance with the following. **Note:** During operational situations, where the risk of actual enemy detection/engagement is greater than low altitude marginal weather operations, alternate breakup procedures may be briefed/executed.

7.3.5.1. Upon the “Execute mountainous” call, formation lead will maintain announced base airspeed or higher and climb to MSA. **(T-1) Note:** Formation lead should accelerate to provide maneuvering room for the formation and to avoid slow airspeeds for wingmen.

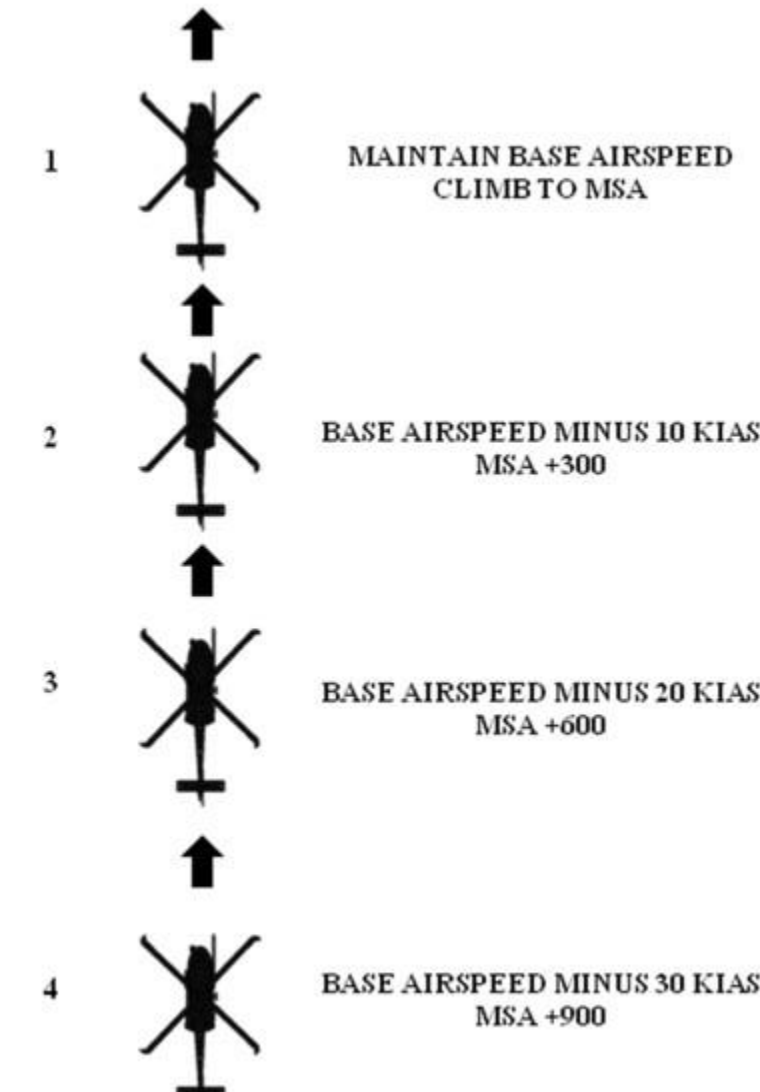
7.3.5.2. Upon the “Execute mountainous” call, 2 will adjust to maintain announced base airspeed minus 10 KIAS and initiate a climb to MSA plus 300 feet. **(T-1)**

7.3.5.3. Upon the “Execute mountainous” call, 3 will adjust to maintain announced base airspeed minus 20 KIAS and initiate a climb to MSA plus 600 feet. **(T-1)**

7.3.5.4. Upon the “Execute mountainous” call, 4 will adjust to maintain announced base airspeed minus 30 KIAS and initiate a climb to MSA plus 900 feet. **(T-1)**

7.3.5.5. Once assigned altitude is reached, maintain base heading and airspeed for 3 minutes and then return to the base airspeed called by formation lead during the “Execute mountainous” call.

Figure 7.2. Mountainous Procedures.



Chapter 8

LOCAL OPERATING PROCEDURES

8.1. Requirements. This chapter is reserved for unit local operating procedures. Procedures herein will not be less restrictive than those contained elsewhere in this manual, nor is this chapter intended to be a single source document for procedures contained in other directives or instructions. Individual squadron local operating procedures are required for all HH-60G units. If more than one HH-60G squadron is co-located at the same installation, only one **Chapter 8** is required but all SQ/CCs must approve and gain approval through their appropriate chains of command. **(T-2) Note:** Before publishing, units will forward copies to appropriate MAJCOM and subordinate agencies who will review the **Chapter 8** and return comments or required changes back to the unit(s), if appropriate. **(T-2)**

8.2. Organization. Organize the local chapter in the following format and, as a minimum, include the following:

- 8.2.1. Section A. Introduction.
- 8.2.2. Section B. General Policy.
- 8.2.3. Section C. Ground Operations.
- 8.2.4. Section D. Flying Operations.
- 8.2.5. Section E. Weapons Employment.
- 8.2.6. Section F. Laser Employment.
- 8.2.7. Section G. Abnormal Operations.
- 8.2.8. Attachments. (Figures/Illustrations).
- 8.2.9. Include procedures for the following in the appropriate Section if applicable:
 - 8.2.9.1. Command and Control
 - 8.2.9.2. Aircraft Toolkit Accountability Procedures
 - 8.2.9.3. Mission Planning/Preparation Procedures
 - 8.2.9.4. Local Weather Procedures
 - 8.2.9.5. Flight Plan Procedures
 - 8.2.9.6. Cross-Country Procedures
 - 8.2.9.7. Aircraft Publication Kit Management
 - 8.2.9.8. TOLD Book Management.
 - 8.2.9.9. Instrument Procedures.
 - 8.2.9.10. Hot/Jammed Gun Procedures
 - 8.2.9.11. Hung Ordnance (Flare) Procedures
 - 8.2.9.12. BASH program guidance to include host nation procedures.

- 8.2.9.13. Environmental Restrictions to Flight Operations (winds, sea state, temperature, etc.) applicable to unit operating locations.
- 8.2.9.14. Taxi/Parking Restrictions/Procedures.
- 8.2.9.15. Alert Procedures.
- 8.2.9.16. Traffic Pattern, Landing Area, and Emergency Procedure Training locations.
- 8.2.9.17. Operations Security & Communication Security Procedures.
- 8.2.9.18. Overwater Flight Covership/Boat Procedures.
- 8.2.9.19. AIE Device Management
- 8.2.9.20. Hot Gas Procedures
- 8.2.9.21. Squadron Briefing Standards (may be published as a separate document)

JAMES C. SLIFE, Lt Gen, USAF
Deputy Chief of Staff, Operations

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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- AFMAN 11-214, *Air Operations Rules and Procedures*, 29 November 2022
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Adopted Forms

AF Form 1067, *Modification Proposal*

AF Form 4303, *Helicopter Landing Zone Survey*

AF Form 4326, *Tactics Improvement Proposal*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

DAF Form 679, *Department of the Air Force Publication Compliance Item Waiver Request/Approval*

DAF Form 847, *Recommendation for Change of Publication*

DD Form 365 – *Record of Weight and Balance Personnel*

DD Form 365-1 Chart A – *Basic Weight Checklist Record*

DD Form 365-2 Form B – *Aircraft Weighing Record*

DD Form 365-3 Chart C – *Basic Weight and Balance Record*

DD Form 365-4, *Transport/Tactical Weight and Balance Clearance Form F*

Abbreviations and Acronyms

AC—Aircraft Commander
ACC—Air Combat Command
ACM—Air Combat Maneuvering
AETC—Air- Education and Training Command
AFI—Air Force Instruction
AFMAN—Air Force Manual
AFMC—Air Force Material Command
AFPD—Air Force Policy Directive
AFRC—Air Force Reserve Command
AFTO—Air Force Technical Order
AFTTP—Air Force Tactics Techniques and Procedures
AGL—Above Ground Level
AHC—Air Handling Characteristics
AHO—Above Highest Obstacle
AIE—Alternate Insertion and Extraction
AIR—Aviation Into-plane Reimbursement
ANG—Air National Guard
ASE—Above Site Elevation
AWBS—Automatic Weight and Balance System
AWL—Above Water Level
BASH—Bird/Wildlife Air Strike Hazard
BHM—Basic Helicopter Maneuvering
C-R—Challenge-Response
C-R—/R—Challenge-Response/Response
CDU—Control Display Unit
CHUM—Chart Updating Manual
COMAFFOR—Commander, Air Force Forces
CONUS—Continental United States
DA—Decision Altitude
DAF—Department of the Air Force
DAFI—Department of the Air Force Instruction

DAFMAN—Department of the Air Force Manual
DD Form—Department of Defense Form
DEC—Digital Electronic Control
DO—Director of Operations
DoD—Department of Defense
DoDI—Department of Defense Instruction
DoDD—Department of Defense Directive
DoDM—Department of Defense Manual
EFB—Electronic Flight Bag
EFQI—Enhanced Fuel Quantity Indicator
EM—Energy Maneuverability
EP—Evaluator Pilot
FARP—Forward Aera Refueling Point
FCF—Functional Check Flight
FLIP—Flight Information Publication
FLIR—Forward Looking Infrared
FP—First Pilot
FRIES—Fast Rope Insertion/Extraction System
GA—Guardian Angel
GPS—Global Positioning System
HAAR—Helicopter Air-to-Air Refueling
HIT—Health Indicator Test
IAHHS—Improved Altitude Hold and Hover Stabilization System
IFR—Instrument Flight Rules
ID—Integrated Defense
IMC—Instrument Meteorological Conditions
IP—Instructor Pilot
IR—Infrared
IVHMS—Integrated Vehicle Health Monitoring System
JMPS—Joint Mission Planning System
KGS—Knots Ground Speed
KIAS—Knots Indicated Airspeed

kN—Kilonewtons
LZ—Landing Zone
MAJCOM—Major Command
MARS—Mobile Aircrew Restraint System
MEP—Mission Essential Personnel
MP—Mission Pilot
MSA—Minimum Safe Altitude
MSL—Mean Sea Level
MTR—Military Training Route
NATO—North Atlantic Treaty Organization
NGA—National Geospatial-Intelligence Agency
NGB—National Guard Bureau
NM—Nautical Mile
NOTAM—Notice to Air Missions
NVG—Night Vision Goggle
NR—Rotor Revolutions Per Minute
OCONUS—Outside the Continental United States
OG/CC—Operations Group Commander
OGE—Out of Ground Effect
OPR—Office of Primary Responsibility
P/N—Part Number
PACAF—Pacific Air Forces
PFPS—Portable Flight Planning System
RM—Risk Management
RVR—Runway Visual Range
SEAS—Single Engine Air Speed
SERE—Survival, Evasion, Resistance, and Escape
SM—Statute Mile
SMA—Special Mission Aviator
SMFCD—Smart Multi-Functional Color Displays
SPINS—Special Instructions
SQ/CC—Squadron Commander

SQ/DO—Squadron Director of Operations

TACAN—Tactical Air Navigation

TC—Training Circular

TO—Technical Order

TOLD—Takeoff and Landing Data

US—United States

USAF—United States Air Force

USAFE—United States Air Force in Europe

USAFE-AFAFRICA—United States Air Forces in Europe-Air Forces Africa

VFR—Visual Flight Rules

VMC—Visual Meteorological Conditions

VNE—Velocity Never Exceed

VTR—Video Tape Recorder

VVOD—Vector Vertical Obstruction Database

WG/CC—Wing Commander

Office Symbols

19 AF/A3V—19th Air Force, Standards and Evaluations Division

ACC/A3—Air Combat Command Director of Operations

ACC/A3J—Air Combat Command Personnel Recovery and Joint Integration Division

ACC/A3JO—Air Combat Command (ACC) Personnel Recovery Aviation Branch

ACC/A3TV—Air Combat Command Standardization and Evaluation Branch

ACC/A3TW—Air Combat Command Weapons and Tactics Branch

ACC/A5RA—Air Combat Command HH-60G/Operational Loss Replacement Branch

AF/A3—Air Force Deputy Chief of Staff for Operations

AF/A3T—Air Force Director of Training and Readiness

AFLCMC/WIU—Air Force Life Cycle Management Center Special Operations Forces, Personnel Recovery and Rotary Division

AFLCMC/WNUS—Air Force Life Cycle Management Center Sustainment Branch

AFLCMC/WNUV—Air Force Life Cycle Management Center Air Crew Performance Branch

AFMC/A3V—Air Force Material Command Operations and Training

AFMRA/SG4E—Air Force Medical Readiness Agency Clinical Engineering & Sustainment (Equipment)

AFRC/A3J—Air Force Reserve Command, Personnel Recovery and Special Operations Division

NGB/A3J—Air National Guard, Personnel Recovery and Special Operations Division

NGB/A5RS—National Guard Bureau Special Missions Branch

PACAF/A31—Pacific Air Forces, Operations Support Division

PACAF/A316—Pacific Air Forces, Standardization and Evaluation Branch

USAFE/A3A—United States Air Forces Europe, Operations Support Division

Terms

Aircraft Commander (AC)—The aircrew member designated by competent authority as being in command of an aircraft and responsible for its safe operation and accomplishment of the assigned mission.

Aircraft Handling Characteristics (AHC)—A series of maneuvers meant to familiarize a crewmember with the aerodynamic characteristics of the aircraft (especially those considered outside the normal flight regime).

Aircrew Member—An individual, designated on the flight authorization who is an aircrew member as explained in AFD 11-4, Aviation Service, AFMAN 11-402, *Aviation and Parachutist Service*, and is assigned to a position listed in AFI 65-503, *US Air Force Cost and Planning Factors*, and is designated on orders to fulfill specific aeronautical tasks.

Aircrew or Crew—The full complement of military, civilian and contract personnel required to operate a USAF aircraft and complete an assigned mission.

Alert Aircraft—An operationally ready aircraft specifically designated to be launched in accordance with timing factors established for the assigned missions with a ready crew available.

Alternate Loading—A method of restraining passengers without using standard troop seats.

Formation Flight—More than one aircraft which, by prior arrangement between crews, operates as a single aircraft regarding air traffic control, navigation and position reports.

Forward Area Refueling Point—Location where refueling and rearming are conducted, normally conducted in an austere environment with engines running. Refueling can be accomplished from a variety of fuel sources (e.g., HC-130, MC-130, pre-positioned fuel stores, another helicopter, fuel truck)

Functional Check Flight (FCF)—A flight or flights performed to determine whether an aircraft, and/or its various components, are functioning according to predetermined specifications while subjected to the flight environment. FCFs are conducted when it is not feasible to determine safe or required operation (aerodynamic reaction, air loading, signal propagation, etc.) by means of ground or shop tests. Conditions requiring FCFs are specified in the –6 TO for each type of aircraft. FCF checks or maneuvers can only be accomplished by current and qualified aircrew members.

Hazardous Cargo or Material—Explosive, toxic, caustic, nuclear, combustible or flammable, biologically infectious, or poisonous materials that may directly or indirectly endanger human life or property, particularly if misused, mishandled, or involved in accidents.

Hot Refueling—Fuel on-load from any fuel source with one or more aircraft engines operating. FARP operations are considered hot refueling when gas is on-loaded.

Hung Ordnance—Any ordnance or stores that fail to release, jettison, or fire and cannot be removed from the weapon prior to landing (chaff or flare squibs that fail to fire are not considered hung ordnance).

Jammed Gun—A gun containing ammunition that cannot be cleared from the gun in flight, but can be rendered mechanically safe, no probability of inadvertent firing exists.

Low-Level Operations—Flight conducted below 500 feet AGL or AWL.

Operational Mission—Any mission not designated as a unilateral training mission.

Walk Around—Inspection of the aircraft exterior and interior for general condition, security, leaks, and/or battle damage.