BY ORDER OF THE
SECRETARY OF THE AIR FORCE

DEPARTMENT OF THE AIR FORCE
MANUAL 11-2MH-139V3

23 APRIL 2024

Flying Operations

MH-139—OPERATIONS PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: This publication is available for downloading or ordering on the e-Publishing website at **www.e-Publishing.af.mil**.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: AFGSC/A3TO

Certified by: AF/A3T
(Mr. William D, Dries Jr.)
Pages: 74

This manual implements Air Force Instruction (AFI) 11-200, Aircrew Training, Standardization/Evaluation, and General Operations Structure. It establishes guidance for the safe and effective operation of all MH-139 helicopters employed by the United States Air Force (USAF) to accomplish their respective missions. This manual applies to all civilian employees and uniformed members of the Regular Air Force, the Air Force Reserve, and those who are contractually obligated to comply with Department of the Air Force (DAF) publications. This manual does not apply to the United States Space Force and the Air National Guard. 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 disposed of in accordance with the Air Force Records Disposition Schedule located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the Office of Primary Responsibility 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; route all supplements to the OPR for coordination prior to certification and approval. Field units below major command (MAJCOM) level will forward copies of their supplements to their parent MAJCOM for post-publication review. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, in accordance with **paragraph 1.3** for non-tiered compliance items. For the purpose of this manual including intent for tiered waiver authority levels, direct reporting units (such as the Air Force District of Washington [AFDW]) are considered a MAJCOM. 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 Department of the Air Force.

New publication establishes guidance for the safe and effective operation of all MH-139 helicopters employed by the United States Air Force (USAF).

Chapter 1

GENERAL GUIDANCE

1.1. Roles and Responsibilities.

1.1.1. Air Force Global Strike Command (AFGSC), Director of Operations and Communications (AFGCS/A3/6), is designated as the responsible agency for this manual in accordance with Air Force Policy Directive (AFPD) 11-2.

1.1.2. Throughout this AFMAN references are made to MAJCOM and Numbered Air Force (NAF) levels of responsibilities. Due to the diverse nature of the structure of MH-139 units, all references to a particular MAJCOM or NAF office are intended to mean that office or equivalent. MAJCOM supplements to this AFMAN will indicate if there is a different office of responsibility.

1.1.3. Commanders. For AFGSC, the 582d Helicopter Group Commander (HG/CC) is equivalent to Operations Group Commander (OG/CC) and has all Wing Commander (WG/CC) authorities for all references within this AFMAN to the OG/CC and/or WG/CC.

1.1.4. Pilots-In-Command. When the situation demands immediate action to enhance safety and/or an urgent requirement exists, the pilot-in-command (PIC) will evaluate all options and take the appropriate action to ensure the safe accomplishment of the mission. Pilots-in-command will report all deviations without an approved waiver IAW AFMAN 11-202V3, *Flight Operations*.

1.2. Deviations. This manual does not authorize deviations from the flight manual, technical orders, or 11-series publications.

1.2.1. Units will report all deviations without an approved waiver through standardization/evaluation channels to the respective MAJCOM flight operations division within 10 duty days of the occurrence. **(T-1)**

1.2.2. When circumstances require, this publication provides guidance for helicopter operations under most circumstances, but it does not substitute for sound judgment. When it is necessary to protect the aircraft and its occupants from a situation not covered by this publication and immediate action is required, the PIC has ultimate authority and responsibility for the course of action. PICs will report all deviations without an approved waiver in accordance with AFMAN 11-202V3 **(T-1)**.

1.3. Waivers. The MAJCOM Director of Operations (A3) is the waiver authority for non-tiered items in this manual. Units will maintain a copy of approved waivers **(T-1)**.

1.4. Development of New Equipment and Procedures. Units are encouraged to suggest new equipment. Submit new aircraft equipment or modification requests to respective MAJCOM requirements division using an AF Form 1067, *Modification Proposal*. Approval must be obtained from respective MAJCOM, AFGSC and Warner-Robins Air Logistics Center (WR-ALC), prior to testing and/or use. **(T-2)**

Chapter 2

GENERAL OPERATING GUIDANCE

2.1. Pilot-in-Command Responsibility and Authority.

2.1.1. In command of all persons aboard the aircraft and vested with the authority necessary to manage their crew and accomplish the mission. **(T-2)**

2.1.2. Responsible for the welfare of the crew and the safe accomplishment of the mission. This begins upon notification and terminates upon completion of the debrief. If the PIC determines that conditions are not safe to prosecute the mission, the aircraft will not depart until the condition is adequately mitigated.

2.1.3. Responsible for and is the final authority for the operation of the aircraft. **(T-1)**

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

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

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

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

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

2.2. Flight Lead. The flight lead (FL) is in charge of the entire formation and is responsible for mission accomplishment. Other than formation training, MAJCOMs may supplement what missions are considered formation and require a FL.

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

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

2.4.1. Civil Search and Rescue (SAR). Units within the continental United States must have an Air Force Rescue Coordination Center (AFRCC) mission number prior to conducting an operational civil SAR mission. **(T-2)** This does not preclude a unit from preparing and posturing for a mission while waiting for the AFRCC number. An AFRCC mission number does not shift Operational Control and confirms the request meets specific criteria, but units/PICs may withdraw support if the mission details have changed significantly. The AFRCC may be reached 24/7 at 1-800-851-3051 or DSN 523-5955. All civil SAR support will be in accordance with Department of Defense Instruction (DoDI) 3003.01, *DoD Support to Civil Search and Rescue (SAR)* **(T-0)**, and AFPD 10-45, *Support to Civil Search and Rescue*. **(T-2)** Additional source documents for the national SAR system can be found at

https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/US-Coast-Guard-Office-of-Search-and-Rescue-CG-SAR/SAR-Publications.

2.4.2. Posse Comitatus Act. Assistance to Civilian Law Enforcement Agencies. In general, military units are prohibited by law from participating in civil law enforcement activities (this does not include SAR requests from law enforcement agencies). **(T-0)** See AFI 10-801 or consult with the Judge Advocate's office for more information. Units will report all requests for assistance and coordinate all requests from civilian law enforcement authorities through the appropriate chain of command. **(T-2)**

2.4.3. Utilization of Civilian Law Enforcement or Medical Personnel. Civilian law enforcement or medical personnel may be required to perform duties at an incident site. These duties may include death determination or human remains removal. If a mission requires transporting such personnel to an incident site, PIC must understand that local and domestic laws (e.g., Posse Comitatus Act), host nation laws, or international laws may affect mission accomplishment. The PIC should review or receive a briefing on applicable laws prior to deployment or recovery of civilian personnel. Approval Authority to carry civilian law enforcement or medical personnel on SAR or Medical Evacuation (MEDEVAC) missions may be delegated to the PIC. If the PIC determines passengers are essential for the successful completion of the mission, and they are unable to contact their controlling agency for approval, passengers may be carried on the segments of flight requiring their presence. Leave a copy of the passenger manifest with a responsible person in accordance with AFMAN 11-202V3.

2.4.4. Human Remains. Rescue personnel should not normally remove human remains from crash or incident sites. Units will leave the decision to remove the remains from a site solely to the local authorities. **(T-2)** Except as per **paragraph 2.4.4.1**, units will not commit resources to the removal of human remains until the mission approval and/or releasing authority (normally the Wing/Group Commander) has been informed and approved the request. **(T-2)** The PIC is responsible for the safety of resources and should not jeopardize them for the recovery of human remains. **(T-3)** The PIC is responsible for compliance with all directions given by local civil authorities concerning the proper removal and handling of remains in that jurisdiction. **(T-3)** Written authorization from the proper local authorities should be received prior to removal, however, factors such as accessibility to the area, weather conditions, darkness, etc., may preclude the practicality of receiving written authorization from local authorities. In such cases, a verbal authorization may be accepted if followed by a written authorization. (See **Attachment 16,** Example Authorization to Remove Human Remains.)

2.4.4.1. Exceptional Cases. In extreme situations where time is critical and communications are impossible, the PIC may remove remains and deliver them to the proper authorities if given authorization from the appropriate civil official. This procedure is authorized only if conditions already make it impossible to obtain timely approval from the mission approval and/or releasing authority. Whenever this procedure is employed, the PIC will request and comply with all directions given by local civil authorities concerning the proper removal and handling of remains in that jurisdiction. **(T-3)**

2.5. Passenger Guidance. The MH-139 is a utility aircraft and is utilized through a variety of mission sets. Units must ensure all organic airlift and rotary-wing requirements of Department of Defense Directive (DoDD) 4500.56, *DoD Policy on the Use of Government Aircraft and Air*

Travel, Department of the Air Force Policy Directive (DAFPD) 24-6, *Transportation*, and Department of the Air Force Manual (DAFMAN) 11-401, *Aviation Management*, are met. **(T-2)**

2.5.1. Passengers may be flown on MH-139 aircraft during the normal course of exercise and contingency operations of the unit.

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

2.5.3. Restrictions. Passengers will be restrained by the safest means possible while still enabling the supported passenger to accomplish their mission. **(T-2)** The PIC will ensure passengers are given a safety briefing and are familiar with the mission profile and events before the flight. **(T-2)**

2.5.4. Manifests. Units/aircrew will manifest and brief all passengers in accordance with Technical Order (T.O.) 1H-139(M)A-1CL-1, *Pilot's Abbreviated Flight Crew Checklist*, DAFMAN 11-401, *Aviation Management*, and MAJCOM guidance. **(T-2)**

2.5.5. When passengers are in the cabin, aircrew will ensure the cabin doors remain closed during flight unless an aircrew member is also in the cabin. **(T-3)** Unit commanders may authorize aircrew to open the cabin doors without an aircrew member in the cabin if a valid need exists and the passengers are thoroughly briefed on cabin personnel and equipment security.

2.5.6. When authorized, passengers (including mission essential personnel [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)**

2.6. Mission Essential Personnel. Mission essential personnel definitions and approvals are outlined in DAFMAN 11-401 and applicable supplements. OG/CCs must weigh the benefits and risks of flying supported personnel and ensure that mission requirements are met for both parties. **(T-2)**

2.7. Inter-fly. An inter-fly is the exchange and/or substitution of aircrews and aircraft between MAJCOMs. Approval authority for aircrew inter-fly is the requesting and supporting OG/CC (or equivalent). Secondary method of training approval as outlined in AFMAN 11-2MH-139V1, *MH-139 Aircrew Training*, may include inter-fly approval. An approved test plan may include inter-fly approval for 96 OG aircrew.

2.8. Intra-fly. An intra-fly is the exchange and/or substitution of aircrew members from separate units under the same MAJCOM. The OG/CC possessing the aircraft is approval authority for intra-fly between units. Intra-fly approval is not required for higher headquarters (HHQ) unit visits, staff assistance visits, Nuclear Surety Inspections, and HHQ-directed exercises.

2.9. Primary Crewmembers. Crewmembers occupying a primary duty position during flight must be MH-139 qualified and current for the mission events to be flown or conducting training/re-currency for that crew position/mission IAW AFMAN 11-2MH-139V1, unless exempted by DAFMAN 11-401. **(T-1)**

2.9.1. Instructor Training Requirements. One instructor is required for each duty position requiring student flight training. Instructors are responsible for the actions of their students. **(T-2)** The only situation where an instructor flight engineer may instruct two student flight engineers at the same time is if one of the students is an instructor candidate undergoing training in a formal syllabus of instruction.

2.9.2. Flight Examiner Requirements. Except for a pilot at a set of flight controls, flight examiners will not occupy a primary duty position. **(T-2)**

2.9.3. When training/re-currency is being conducted in the cabin, the instructor/safety crewmember/flight examiner will not be used as a primary scanner on the opposite side of the aircraft. **(T-2)**

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

2.9.5. FCF-certified crewmembers maintaining basic aircraft qualification that are non-current or unqualified for operational/special mission items may perform FCF operations.

2.10. Minimum Crew. The minimum crew is specified in the flight manual and **Table 2.1**. **(T-2)** MAJCOMs may supplement the minimum crew required for all mission profiles flown by their assigned units, including waiver authority. MAJCOMs will ensure minimum crew requirements are set to minimize risk to safety of flight and mission accomplishment in all conditions that may be reasonably encountered. **(T-2)** At no time will personnel not authorized per DAFMAN 11-401 manipulate flight controls. **(T-2)** If authorized, single pilot operations will only occur from the right seat. **(T-1)**

Table 2.1. Crew Compliment.

Mission/Event	Crew Complement	
	Pilot	Flight Engineer
Maintenance Ground Run (Note 1)	1	0
Contact Training	2	0
Ferry Flight/Cross-Country (Note 2)	2	0
Instrument Flight	2	0
Unprepared Landing Area Operations	2	1
Functional Check Flight	2	0
Hot Refueling	2	1
Day Water Operations	2	1
Alternate Insertion/Extraction and External Load Operations	2	1
SAR/Medical Evacuation	2	1
Formation/Low-Level Operations (Notes 3, 4)	2	2
Aerial Gunnery Operations (Note 5)	2	2
Night Vision Goggle (NVG) Water Operations	2	2

Notes:
1. Aircraft taxi operations are permitted. Pilot must be certified as a basic aircraft commander. If conducting FCF ground runs, pilot must be certified as an FCF aircraft commander.
2. Includes any flight departing and arriving from a prepared surface. See **paragraph 4.19**.
3. See **paragraph 4.18** for altitude definitions. Does not include day training searches in a surveyed low-level area. Formation flight above 500 feet AGL may be performed with one FE, however they must be positioned in the cabin on the same side as the trailing aircraft.
4. Air Force District Washington may adjust the required crew compliment in a supplement to this AFMAN.
5. Includes dry, blank fire, and live fire weapons employment patterns.

2.11. Maximum Flight Duty Period (FDP). Follow non-augmented crew flight duty periods as outlined in AFMAN 11-202V3. **(T-1)** In addition to AFMAN 11-202V3 and MAJCOM supplements the following restrictions apply:

2.11.1. If the flight director (i.e., coupled modes) is not fully operational for the required mission profile, or its use is denied for more than 4 hours, the FDP will be 12 hours. **(T-3)** A fully operational flight director is defined as a system which is capable of coupling course (navigation [NAV] mode or heading [HDG] select) and altitude. This does not preclude the PIC from extending FDP in accordance with AFMAN 11-202V3.

2.12. Crew Rest and Compensatory Time Off.

2.12.1. Medical personnel called to duty for urgent SAR/MEDEVAC missions with less than 12 hours of crew rest may perform lifesaving duties. All operational support fliers (OSF) require adequate crew rest in accordance with AFMAN 11-202V3 prior to conducting flying training. **(T-2)**

2.12.2. Post-mission compensatory time off applies to all alert duty and flying temporary duty assignments (TDY) and begins upon the completion of alert duty or final return of an individual to home station and runs continuously until completed. Post-mission compensatory time off must be completed before starting predeparture crew rest for a subsequent flight. **(T-3)** Units will not require any official duties that would violate the post-mission compensatory time off. **(T-3)**

2.12.2.1. Post-mission compensatory time off will be computed at a rate of 1 hour off for every 3 hours of alert or TDY duty, not to exceed 72 hours. **(T-3)**

2.13. Alert Aircraft. Prepare the aircraft by performing the required alert procedure flight manual checklists and configure/position required equipment. Maintain aircraft on alert status as follows:

2.13.1. Plan preflight validity periods to limit the need to update the preflight during an alert period. PREFLIGHT, ACCEPTANCE, and COCKING procedures will be performed following maintenance preflight inspections as defined in T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* the Integrated Electronic Technical Manual (IETM). **(T-2)**

2.13.2. Aircrews will perform the ACCEPTANCE and COCKING checklists (hoist and weapons inspections as applicable) to place the aircraft on alert status. **(T-2)** Once accepted for alert, make the following entry in the Air Force Technical Order (AFTO) Form 781A,

Maintenance Discrepancy and Work Document: - "INFO NOTE: Aircraft accepted for alert (time/date). Acceptance check, power assurance check (PAC), hoist check (as applicable), and weapons preflight (as applicable) completed."

2.13.3. An alert crewmember will be present whenever maintenance is performed in accordance with the flight manual. **(T-2)** If an alert crewmember is not available, PIC may authorize another qualified MH-139 aircrew member to check the area in which maintenance was performed and ensure the alert crew is briefed on the maintenance actions. The check must be performed prior to flight. **(T-2)**

2.13.3.1. If the PIC approves any maintenance action on an aircraft after being accepted for alert, make the following entry in the AFTO Form 781A: "INFO NOTE: Aircraft remains on alert. Maintenance cleared to work (equipment/system) only."

2.13.3.2. Once a qualified MH-139 aircrew member inspects and accepts the aircraft following maintenance actions, make the following entry in the AFTO 781A: "INFO NOTE: Post maintenance look-over (PMLO) completed (time/date). Aircraft remains on alert." This entry complements and does not replace the original alert acceptance entry.

2.13.3.2.1. An aircrew member inspection is not required following basic ground handling and servicing (e.g., towing, refueling, window cleaning, etc.).

2.13.3.2.2. If aircraft weapons are removed from the aircraft, a full weapons preflight in accordance with T.O. 1H-139(M)A-1, *Flight Manual, USAF Series MH-139A Helicopter*, is required prior to use. **(T-3)**

2.13.4. Thru-Flight Inspections. A thru-flight inspection consisting of the diamonded items of the BEFORE EXTERIOR INSPECTION, and EXTERIOR INSPECTION checklists will be accomplished after each flight. **(T-1)** Thru-flight inspections performed by maintenance personnel in accordance with T.O. 00-20-1 and the IETM satisfy this requirement. An alert crewmember or other qualified MH-139 aircrew member designated by the PIC will be present during the thru-flight inspection or at the completion of the thru-flight inspection to ensure all cowlings/access doors are secure and to check the areas in which the inspection and/or maintenance was performed. **(T-2)**

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

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

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

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

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

2.14.1. When an alert crew change occurs, and the same aircraft remains on alert, there is no requirement to perform another preflight. Should the aircraft remain on alert for more than 72 hours, if it has flown or not, complete another full acceptance check in accordance with **paragraph 2.13.2**. **(T-2)**

2.14.2. When an alert aircraft changes, the alert crew will follow guidance in **paragraph 2.13.2**. **(T-2)** If the alert crew is not available, other qualified aircrew may perform acceptance procedures at the mission commander's discretion.

2.15. Armed Crewmembers. Unit commanders may direct arming of crewmembers as deemed necessary by mission threat analysis. During all operations with an aircraft weapon system on board, an aircrew member will be armed 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 Department of Defense Manual (DoDM) 5100.76_AFMAN 31-101V2, *Physical Security of Sensitive Conventional Arms, Ammunition, & Explosives (AA&E*) and applicable supplements. During training events using blank ammunition, follow AFMAN 31-129, *USAF Small Arms and Light Weapons Handling Procedures* guidance. **(T-2) Exception:** Units conducting operations outside the continental United States (OCONUS) are exempt from being armed if prohibited by host nation laws or a status of forces agreement.

2.16. Armed Passengers. The PIC is the approving authority for armed passengers.

2.17. Aircraft Security. The PIC is responsible for the security of the 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 overnight at secure military facilities. **(T-3)** If mission requirements dictate remaining overnight at an unsecure airfield, the PIC will ensure adequate aircraft security. **(T-2)** Refer to Air Force Life Cycle Management Center Helicopter Program Office (AFLCMC/WIH) MH-139A Security Classification Guide and AFMAN 31-101V1, *Integrated Defense (ID) Planning*, for security requirements.

2.17.1. If the aircraft is parked in a restricted or controlled area on a DoD facility or US-controlled location, remove all removable classified materials. **(T-2)**

2.17.2. If the aircraft is not parked in a restricted or controlled area on a DoD facility:

2.17.2.1. Zeroize all communications security (COMSEC). **(T-2)**

2.17.2.2. Remove removable classified materials, weapons, and ammunition. **(T-2)** Guidance for weapons and ammunition security is provided in DoDM5100.76_AFMAN 31-101V2. Store classified materials in accordance with DoDM 5200.01V3_AFMAN 16-1404V3, *Information Security Program: Protection of Classified Information*. **(T-1)**

2.17.2.3. Secure the flight engineer windows from the inside. **(T-2)**

2.17.2.4. Lock all cockpit, cabin, and baggage doors. **(T-2)**

2.17.2.5. When returning, confirm all doors/windows remain locked and that there is no evidence of tampering. **(T-2)**

2.17.3. If aircraft tampering is confirmed or suspected, the PIC will report the incident to their home base Chief of Information Protection. **(T-2)**

Chapter 3

MISSION PREPARATION

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

3.1.1. Flight Lead/PIC (or designated crewmember) is responsible for:

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

3.1.1.2. Reviewing go/no-go status for all crewmembers.

3.1.1.3. Assessing risk management and mitigating appropriately for the flight using MAJCOM guidance.

3.1.1.4. Present a logical briefing that promotes safe, effective mission accomplishment. Mission elements/events may be modified and briefed airborne provided flight safety is not compromised. **(T-3)** 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. See **paragraph 3.2**.

3.2. Briefing/Debriefing Requirements. Use applicable briefing guides in Attachments **2 – 14**. Items listed may be briefed in any sequence. Those items published in governing publications, Air Force Tactics, Techniques, and Procedures, or unit-specific guidance and understood by all participants may be briefed as "standard." Specific items not pertinent to the mission do not need to be covered.

3.2.1. The briefing should incorporate measurable and attainable desired learning objectives for all training events.

3.2.2. Ensure flight responsibilities, formation positioning, employment tactics, limitations, and requirements for each phase of flight are briefed. **(T-2)**

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

3.2.4. Evaluate and mitigate risk appropriately for the mission by utilizing risk management principles. **(T-2)** Identify risks, mitigation measures, and document risk acceptance at the appropriate levels. **(T-3)**

3.2.5. Conduct a thorough debrief with aircrew and support assets immediately after the return of teams or aircrews from a sortie.

3.3. Weather.

3.3.1. Wind Restrictions. In accordance with the flight manual. **(T-1)**

3.3.2. Visual Flight Rules (VFR) Weather Minimums. In lieu of MAJCOM guidance, aircrew will comply with the weather minimums in AFMAN 11-202V3 and applicable supplements. **(T-2)** Special VFR operations are permitted for both training and operational missions below 10,000 feet MSL in accordance with Title 14 Code of Federal Regulations, Section 91.157, *Special VFR weather minimums,* AFMAN 11-202V3, and applicable supplements.

3.3.2.1. Air-to-surface: Follow AFMAN 11-214, *Air Operations Rules and Procedures*, air-to-surface training weather minimums for all live-fire, blank, or dry weapons employment training.

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

3.3.4. IFR Operational Flights.

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

3.3.4.2. With a departure alternate, aircrew will not takeoff unless weather at the departure airfield is equal to or above one-half the published visibility minimum required for the appropriate aircraft category, but no less than ¼ mile (1,200 RVR) for an available approach. **(T-2)** Weather must be equal to or above published visibility minimum if aircrew use a copter-only approach at the departure airfield. **(T-2)** Pilots will select the departure alternate using the following criteria: **(T-2)**

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

3.3.4.2.2. Weather enroute to the departure alternate permits flight within aircraft limitations and complies with AFMAN 11-202V3 criteria. The aircraft must be capable of maintaining minimum enroute altitudes (MEA) or off route obstacle clearance altitude to the alternate if an engine fails. **(T-2)**

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

3.4. Fuel Planning. Aircrews will manage aviation fuel as a limited commodity and precious resource. **(T-1)**

3.4.1. For all flights, aircrew will plan to arrive at the destination with a minimum of 350 pounds (160 kilograms) of reserve fuel. **(T-2)**

3.4.2. For instrument flight planning purposes, when visibility-only criteria is used, or when destination weather may be unreliable, aircrew will plan to use no less than 450 pounds (205 kilograms) of fuel for descent, approach, and missed approach in addition to required fuel reserves. **(T-2)**

3.5. Adverse Weather:

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

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

3.6. Transponder Requirements.

3.6.1. The DPX-7 transponder should be flown with the following configuration:

3.6.1.1. Mode 1. The MH-139 uses the extended Mode 1 12-bit reply. Ensure that the extended Mode 1 code maps to the legacy valid 5-bit octal Mode 1 code. Load and operate Mode 1 in accordance with the special instructions (SPINS) or host-nation requirements.

3.6.1.2. Mode 2. No restrictions. Load and operate Mode 2 in accordance with the SPINS.

3.6.1.3. Mode 3A. No restrictions. Load and operate Mode 3A as assigned per air traffic control (ATC), or in accordance with the SPINS.

3.6.1.4. Mode C. No restrictions. Operate Mode C as assigned per ATC or the SPINS.

3.6.1.5. Mode S and (Automatic Dependent Surveillance-Broadcast) ADS-B. Mode S and ADS-B Squitter should only be enabled when transiting civil airspace that mandates the use of Mode S and ADS-B and is not required at any time in US controlled airspace. Mode S and ADS-B should be turned off while accomplishing training and operations. Operations should be conducted using Mode 3A/C to the maximum extent possible. If required, load and operate Mode S and ADS-B in accordance with the SPINS.

3.6.1.5.1. Aircraft Identification (ID). For CONUS set the aircraft ID to 00000000, never enter actual aircraft tail number or callsign. If required to populate aircraft ID, enter the DD Form 1801, *DoD International Flight Plan*, callsign, which is limited to seven characters (e.g., WOLF11).

3.6.1.5.2. Mode S Address. Only the default assigned Mode S address, or an operational Headquarters Air Force (HAF)/MAJCOM authorized Mode S address from the DoD Air Traffic Control Radar Beacon System, Identification Friend or Foe, Mark XII/Mark XIIA, Systems (AIMS) assigned Mode S address block may be used. DoD AIMS Program Office (PO) assigns Mode S addresses for all US military aircraft after Mode S certification. Platform or Service Program Offices request the 24-bit address from the DoD AIMS PO at **dod.aimspo.wkflo@us.af.mil**. If used, Mode S address must be checked prior to flight to ensure correct Mode S code is properly loaded. **(T-2)**

3.6.1.5.3. Mode S Enhanced Surveillance (EHS). Not authorized.

3.6.1.6. Mode 4. Not authorized.

3.6.1.7. Mode 5. For CONUS Mode 5 should be turned ON. Operate Mode 5 in accordance with SPINS. **Warning:** Operating with the transponder in standby and Mode 5 in OFF will not allow for acknowledgment of Mode 5 lethal interrogations. During emission control operations, ensure Mode 5 is set to ON if transponder is set to standby.

3.6.1.7.1. Mode 5 Level 2. For CONUS, Level 2 should be set to ON. Operate Level 2 in accordance with the SPINS.

3.6.1.7.2. Mode 5 Squitter. For CONUS, Squitter should be set to ON. Operate Squitter in accordance with the SPINS.

3.6.1.7.3. Mode 5 National Origin and PIN: This Mode 5 National Origin and PIN should be programmed by maintenance personnel, and should be stored on the aircraft, either a placard in the cockpit, or in the aircraft logbook. Contact maintenance if the

default National Origin or PIN is incorrect or is required to be changed. DoD AIMS program office assigns the Mode 5 National Origin and PIN for all US military aircraft after Mode 5 certification. Platform or Service Program Offices can download the most recent list on Secure Internet Protocol Router Network (SIPRnet) at **https://go.intelink.sgov.gov/xHRBSYF**. The Mode 5 National Origin and PIN must be checked prior to flight to ensure Mode 5 is properly loaded. **(T-2)** Load operational Mode 5 National Origin and PIN in accordance with SPINS requirements.

3.6.2. If the DPX-7 is not operational, do not operate the XS-858B civil transponder in any mode other than standby if conducting operational or non-instrument training missions. **(T-2)** The XS-858B supports Mode S EHS and downlinks multiple aircraft parameters and cannot be disabled. If transponder operations are required, disable ADS-B and follow guidance in **paragraph 3.6.1.5**.

3.7. Charts.

3.7.1. Master Low-Level Hazards Chart. Units will maintain a master chart depicting the low-level flight areas for flight planning purposes. **(T-2)** Display the chart in the mission planning area or maintain the electronic files on all unit computer-aided mission planning systems. **(T-3)** Annotate any published low-level routes, no-fly areas, noise abatement areas, or other hazards within the boundaries. **(T-2)** Master charts will be updated monthly using National Geospatial-Intelligence Agency (NGA) vertical obstruction data or equivalent host nation product. **(T-2)** Annotate the date of review on the master chart. **(T-2)** Units will annotate all man-made obstacles over 50 feet above ground level (AGL) (or commensurate with the lowest altitude flown). **(T-2)** Do not duplicate NGA vertical obstruction hazards. **(T-2)** When uncharted obstacles are found, update the chart/files with location, approximate height in both AGL and mean sea level (MSL). **(T-3)** PICs will ensure this information is immediately passed to appropriate supervisors upon landing. **(T-3)**

3.7.2. In-Flight Charts. Units will ensure charts used for flying reflect the same information as the master chart. **(T-2)** Crews flying VFR will include sectional charts or Joint Mission Planning System (JMPS)-generated charts with the following overlays displayed: airports/heliports, airspace boundaries, special use airspace, and military training routes. **(T-2)** If conducting low-level flight operations, hazards as specified in **paragraph 3.7.1** will always be displayed. **(T-1) 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. Charts with a scale of 1:250,000 or greater detail are required for low-level operations. **(T-3) Exception:** When directed lower by a Federal Aviation Administration/National Aeronautical Charting Office (NACO) Helicopter Route Chart.

3.7.3. Electronic charts will comply with requirements in paragraphs **3.7.1**, **3.7.2**, and **3.8**. **(T-2)** JMPS-produced electronic chart overlays are not required to be displayed if the data is viewable by other means (e.g., ForeFlight aeronautical map layer). Time elapsed and distance time remaining markers are not required when using electronic charts. Minimum safe altitudes (MSA) are not required to be depicted on electronic charts provided they are immediately available to the aircrew in flight.

3.7.4. Digital Map System. Use of the Digital Map system for navigation is permitted provided the charts are current and will comply with the requirements in **paragraph 3.7.3**. **Warning**:

The Skyforce Digital Map vertical obstruction database filters out any hazards less than 200 feet.

3.7.4.1. Low-Level Operations. Maps with a scale of 1:250,000 or greater detail must be loaded on the aircraft for low-level operations. **(T-3)** When using the Digital Map for low-level navigation, the pilots must display course line, airports/heliports, Class B/C/D airspace boundaries, special use airspace boundaries, and obstacles. **(T-2)**. If used for navigation, low-level operations are only permitted to the minimum displayed obstacle height on the Digital Map obstacle data class or underlying raster chart. **(T-2)**

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

3.8.1. PICs will ensure a copy of the planned route or flight log/AF Form 70, *Pilot's Flight Plan and Flight Log*, is available at the unit. **(T-3)**

3.9. Low-Level Flight. Aircrew will only conduct low-level training in a surveyed low-level flight area. **(T-2)** Specific geographical areas such as missile complexes and operational areas may be designated as low-level flight areas. **Warning:** During low-level flight, pay close attention to the possibility that wires may be draped across a valley while the supporting poles are not visible from low-level navigation altitudes. Units will establish defined boundaries and meet the following requirements prior to any low-level flight:

3.9.1. Established low-level surveyed routes or Low Altitude Tactical Navigation (LATN) areas. MAJCOMs will establish guidance in accordance with DAFMAN 13-201, *Airspace Management*. **(T-2)**

3.9.2. If a route or area has been inactive or flight operations have not been conducted in 12 months or greater, units will conduct a resurvey before any low-level training flights are conducted in the area. **(T-2)** MAJCOMs may determine additional criteria for area size, activity, and tracking requirements.

3.10. Takeoff and Landing Data. PICs are responsible for ensuring TOLD calculations are complete. TOLD may be computed using flight manual charts or MAJCOM-approved TOLD application for an approved Electronic Flight Bag (EFB). In flight TOLD may be computed by the flight management system (FMS).

3.10.1. TOLD will be completed and briefed prior to takeoff. **(T-2)** Compute data applicable to the mission profile. For mission events, aircrew should complete a separate worst case TOLD during pre-mission planning.

3.11. Weight and Balance.

3.11.1. The PIC, or designated crewmember, will compute crew/passenger/equipment off-loading or on-loading to ensure center of gravity (CG) and weight limits are not exceeded. **(T-2)** Confirm basic aircraft weight and moment with certified DD Form 365-3, *Weight and Balance Record, Chart C – Basic Weight and Balance Record* in accordance with T.O. 1-1B-50, *Intermediate and Depot Maintenance Aircraft Weight a1nd Balance*. These computations will address the maximum number of personnel/maximum amount of equipment allowed in the cabin and cargo compartments without exceeding CG or structural limitations. **(T-2)** This procedure applies to all operations in which CG or weight limits may be exceeded as a result

of personnel/equipment on- or off-loading. A manual or electronic DD Form 365-4 may be used. MAJCOMs must approve any electronic system other than the Automated Weight and Balance System (AWBS) or the FMS.

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

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

3.11.3.1. Standardized Loading. Aircraft configuration encompasses weight, CG, cabin equipment/seating/personnel layout, and mission equipment (i.e., forward looking infrared [FLIR], hoist, life raft, cargo hook, alternate insertion/extraction [AIE] devices, guns). DD Forms 365-4 may be prepared for standardized loading used by the unit. These canned forms are authorized when an aircraft's weight, moment, and CG remain within limits found in T.O. 1H-139(M)A-5-2, *Loading Data Manual, USAF Series MH-139A Helicopter*.

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

3.11.4. Initial Takeoff Gross Weight.

3.11.4.1. If the initial takeoff condition gross weight changes by more than 500 pounds (230 kilograms), aircrew must generate a new or corrected DD Form 365-4. **(T-3)**

3.11.4.2. When initial takeoff condition gross weight does not change by more than 500 pounds (230 kilograms), then a new or corrected DD Form 365-4 need not be generated. Even though no written adjustments are required, aircrew will calculate the new gross weight and CG and ensure limits are not exceeded. **(T-2)**

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

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

3.11.6. Flight Management System Initialization. Center of gravity calculations using the FMS are not authorized. **(T-1)** When performing the FMS performance initialization, aircrew will enter the aircraft zero fuel weight and center of gravity (CG) from the DD Form 365-4 into the basic weight and CG fields on the FMS. **(T-3)** Remaining fields other than fuel will be set to zero. **(T-2)** Confirm FMS gross weight and CG calculations prior to take-off.

Chapter 4

NORMAL OPERATING PROCEDURES

4.1. Crew Duties and Responsibilities.

4.1.1. Automation. Both pilots are responsible for comparing the performance of the autoflight system with the desired flight path of the aircraft as well as monitoring the autoflight system whenever any flight mode is engaged or changes.

4.1.1.1. The pilot flying (PF) will verbalize when the flight director is coupled and decoupled and what mode(s) are being utilized. **(T-2)** Changes to the flight director accompanied by a chime will be verbally acknowledged by the PF with a description of the reason for the chime (e.g., "altitude captured"). **(T-2)**

4.1.1.2. When the flight director is engaged, the PF should operate the guidance controller, respective display controller, and remote instrument controller. The pilot monitoring (PM) should verbalize that the proper selections have been set and adjust their respective flight director and remote instrument controller references as required.

4.1.1.2.1. The possibility exists for 5G C-Band radio altimeter interference to cause an AFCS slowover condition, resulting in the helicopter slowly drifting from the expected flight path. When using radar altitude hold (RHT), autolevel (ALVL), or transition up (TU) flight director (FD) modes, pilots should monitor the flight controls and backup the radio altimeter with the barometric altimeter and/or visual references.

4.1.1.3. When the flight director is not engaged, the PM should operate the guidance controller and the PF should verbalize that the proper selections have been set. Each pilot will adjust their respective flight director references as required.

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

4.1.3. Emergency Procedures. The PM is the primary crew member responsible for executing emergency procedure actions that do not require manipulation of the flight controls while the pilot flying maintains aircraft control and reacts appropriately. All engine mode switches, engine control levers, fuel shutoff valve switches, and hydraulic shutoff valve switch will be visually confirmed by a second crewmember prior to being actuated in flight. **(T-1)** Appropriate checklists will be referenced for guidance during the emergency. **(T-1)**

4.1.4. Aural Messages. The pilot will verbally acknowledge all aural crew alerting system (CAS) and enhanced ground proximity warning system (EGPWS) messages and take corrective action as appropriate. **(T-2)**

4.1.5. 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)**

4.2. Aircrew Flight Equipment (AFE), Clothing and Equipment. Reference T.O. 14-1-1, *U.S. Air Force Aircrew Flight Equipment Clothing and Equipment* for AFE equipment qualified by AFLCMC/WNU. This T.O. does not include items deemed safe-to-fly. Units may contact AFLCMC/WNU or the MAJCOM AFE Functional Manager for safe-to-fly approved items.

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

4.2.2. Aircrew members will keep identification tags (dog tags) on their person. **(T-2)** MAJCOMs will determine additional survival vest and component requirements. **(T-2)**

4.2.3. Overwater Flight. Overwater AFE equipment 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 AFMAN 11-301V1, *Aircrew Flight Equipment Program*, AFMAN 11-301V2, *Management and Configuration Requirements for Aircrew Flight Equipment*, and MAJCOM instructions. **(T-2)** A life raft will be on-board for overwater flights when planned route of flight is beyond auto-rotational 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.

4.2.4. 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)** Commanders will determine additional requirements appropriate for the terrain and climatic conditions. **(T-3)** Maintenance and logistics support personnel will wear flame resistant flight gear equivalent to the clothing/equipment used by aircrew in accordance with **paragraph 4.2** when performing in-flight duties. **(T-3)** Civilian contractors will abide by local contract requirements. **(T-3)**

4.2.5. Any personnel who are required to be in close proximity to an operating helicopter require eye and ear protection in accordance with T.O. 1H-139(M)A-1. **(T-1)** Additionally, the PIC will ensure hearing protection is available and is responsible for distributing devices to passengers prior to flight. **(T-3)**

4.3. Publications Required for Flight. Aircraft commanders will ensure the minimum publications listed in **Table 4.1** are on board the aircraft prior to departure either on an EFB or in a publication kit unless specified by MAJCOM. **(T-2)** Unit commanders may supplement as desired. Aircrew EFBs are restricted to those approved by MAJCOM and will be operated in accordance with MAJCOM guidance. **(T-2)**

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

4.3.2. Copies of the BEFORE TAKEOFF, AFTER TAKEOFF, BEFORE LANDING, EXTERNAL HOIST OPERATING PROCEDURE, SCRAMBLE, and weapons system emergency checklists may be posted in the cockpit and/or cabin at the discretion of the unit. Units will ensure posted checklist copies are current. **(T-1)**

Table 4.1. Publications Required for Flight.

Publication	Notes
T.O. 1H-139(M)A-1	1
T.O. 1H-139(M)A-1CL-1	
T.O. 1H-139(M)A-1CL-2, *Flight Engineer Abbreviated Flight Crew Checklist*	
T.O. 1H-139(M)A-5-1, *Flight Manual, Sample Basic Weight Checklists*	
T.O. 1H-139(M)A-5-2	
Supplemental Weight and Balance Handbook	2
T.O. 1H-139(M)A-6CF-1, *Acceptance and Functional Check Flight Procedures*	1
T.O. 1H-139(M)A-6CL-1, *Acceptance and Functional Check Flight Procedures Checklist*	1
AFMAN 11-2MH-139AV3, *MH-139A Helicopter Operations Procedures,* and applicable supplements	
AFMAN 11-202V3, and applicable supplements	
DoDM 4140.25-M, Vol. III, *DoD Management of Energy Commodities: Fuel Cards*	
Flight Information Handbook	
En Route Low Altitude Charts for areas of operation	
VFR Maps/Charts (e.g., Sectionals) for areas of operation	
Low Altitude Instrument Approach Procedures for areas of operation	
IFR and VFR Supplement	
Standard Form 44, *Purchase Order-Invoice-Voucher*	2
Notes: 1. Required during local FCF operations. No additional flight publications are required. 2. Paper copy required.	

4.4. Aircraft Database. PICs will ensure the Primus Epic navigation and EGPWS databases in the aircraft are current prior to flight. **(T-2)** MAJCOMs may publish guidance for operations with expired databases. Unit Commanders will ensure procedures are in place to maintain the currency of aircraft databases on unit assigned aircraft. **(T-3)**

4.5. Minimum Aircraft Equipment and Instrumentation. Reference DAFI 21-103, *Equipment Inventory, Status and Utilization Reporting*, and MAJCOM supplement for the list of equipment required for flight and to determine if minimum aircraft systems/equipment are available.

4.5.1. In accordance with AFMAN 11-202V3, the final decision regarding equipment required for a mission rests with the PIC. When the PIC considers an item essential for the accomplishment of the mission, the PIC will designate the component mission-essential, and it will be repaired or replaced prior to departure. **(T-3)** Acceptance of an aircraft by a PIC to operate one mission (or mission segment) with a degraded or inoperative item or system does not commit that PIC or a different PIC to subsequent operations with the same items/systems inoperative.

4.6. Seat Belt and Restraint Devices. The term 'authorized restraint device' pertains to seat belts and devices approved for use in accordance with MAJCOM approval, technical orders, safe-to-fly approvals, or operational safety, suitability, and effectiveness compliance. A seat belt or restraint device will be worn by all personnel. **(T-1) Exception:** With the cabin doors closed, the PIC may direct crewmembers to perform duties in the cabin unrestrained for brief periods when required to don harnesses, attend to passengers, or change seats.

4.6.1. Seat Belt Use. 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 run-up, and extended ground operations, a minimum of one pilot will be strapped in and will monitor the controls. **(T-1)**

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

4.6.1.2. All crewmembers will wear a seat belt and shoulder harness before conducting one engine inoperative (OEI) training, degraded autopilot (AP) operations training, and FCF autorotation training. **(T-2)**

4.6.2. Restraint Device Use. When use of cabin seating is not possible due to mission requirements, personnel will be secured using an authorized restraint device. **(T-1) Warning:** Not using a seat belt or restraint device for cabin occupants increases the chance of personal injury in the event of an emergency where ground impact and/or aircraft rollover occurs.

4.6.2.1. Attach the restraint device to the ceiling attachment or a tie down ring attached to the ceiling flight engineer seat track. **(T-2)** Only one restraint device can be attached to each attachment at the same time. **(T-2)** Restraint devices will be attached either directly to fittings or using locking/auto-locking carabineers with a minimum force criterion of 5,000 pounds or 23 kilonewtons. **(T-2)** Adjust the length of the restraint device to preclude accidental exit from the aircraft. **(T-2) Warning:** An improperly adjusted restraint device may result in injury or loss of life. **Note:** Tie down rings attached to the floor seat tracks are not certified for personnel restraint attachment.

4.6.2.2. Restraint devices will not be removed until after landing. **(T-1) Exception:** During AIE operations, exit only when cleared by the PIC. Restraint devices will be reattached prior to resuming flight operations. **(T-1)**

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

4.8. Communications.

4.8.1. Primary Radio. The PIC will inform the crew of the primary radio. **(T-2)** All crewmembers will monitor the primary radio unless specifically directed otherwise by the PIC. **(T-2)**

4.8.2. To maintain operational security, crews should utilize frequency hopping/anti-jamming nets and/or secure communications to the maximum extent possible on operational and tactical

training missions. This includes but is not limited to interflight, command and control, and mission partner communications.

4.8.3. Intercom. All crewmembers will listen to the intercom. **(T-2)** Clearance is required from the PIC prior to switching off the intercom. During critical phases of flight, intra-plane transmissions will be limited to those essential for crew coordination. **(T-2)**

4.8.3.1. Ensure the cockpit voice recorder function (CVRF) mute switch is on if classified information is discussed on the intercom or classified radio communications occur. **(T-2)** Return the CVRF mute switch to the off position when classified communications are complete. Do not discuss classified information over the intercom if the Polycon is powered on. **(T-2)**

4.9. Power Requirements. All primary flight crewmembers are required to know the power margin for the intended operations. Power margin or hover ceiling will be briefed prior to final approach. **(T-2)** Maximum gross weight for hovering (MGWH) using takeoff power (TOP) may be computed in lieu of power available/required. For multiple approaches to the same area, margin required will be briefed for the applicable maneuver with the smallest power margin. **(T-2)** Updates will be computed and briefed if power margin decreases (i.e., gross weight, pressure altitude, or temperature increase). **(T-3)**

4.9.1. A second aircrew member will recompute TOLD to confirm power requirements when the power margin is within 10 percent of the power rating or when the gross weight is within 500 pounds (230 kilograms) of the MGWH for the type of maneuver being flown. **(T-2)** Use the rated TOP limit for takeoff and landing maneuvers and the rated hover utility power limit for out of ground effect (OGE) maneuvers.

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

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

4.9.4. Landing Zone Power Requirements:

4.9.4.1. Clear Escape Route. The minimum power available required for areas with a clear escape route is computed hover power for the intended hover height at the landing location. **(T-2)**

4.9.4.2. Restricted Escape Route. The minimum power available required for areas with a restricted escape route is computed OGE hover power for the landing location. **(T-2)**

4.9.4.3. Water Operations. Minimum power available required for water operations is computed OGE hover power. **(T-2)**

4.9.4.4. Restricted Visibility Operations. Any time the PF anticipates losing ground references due to sand, dust, snow, or other obscurations, the power margin must be 5 percent using TOP. **(T-2)**

4.9.4.5. When landing to a surface area equal to or smaller than the rotor diameter, such as a pinnacle or ridgeline, computed OGE hover power must be available. **(T-2)**

4.10. Fuel Management. The PIC, or designated crewmember, will monitor fuel consumption and keep the crew advised of fuel status. **(T-2)**

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

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

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

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

4.11.2. Precautionary Landings Due to Weather.

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

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

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

4.13. Aircraft Servicing. Crewmembers used as refueling supervisors will comply with T.O. 1H-139(M)A-1 and T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding.* **(T-2)** At locations with refueling support, aircrews will not refuel unless extenuating circumstances dictate. **(T-3)** When not directly involved in the refueling operation, personnel will remain at least 50 feet from the refuel operation and/or any pressurized fuel carrying servicing component. **(T-3)**

4.13.1. MAJCOMs will establish procedures to certify crewmembers prior to accomplishing hot refueling duties. Conduct hot refueling in accordance with AFI 11-235, *Specialized Refueling Operations*, T.O. 00-25-172, and appropriate flight manuals. **(T-2)**

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

charge receipts are transferred to the unit document control officer (DCO) at the completion of the mission. **(T-3)**

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

4.13.4. In the event the AIR Card® is not accepted aircrew will use the Standard Form (SF) 44 for payment purposes. **(T-3)** The aircrew will complete the SF44 and attach it to the merchant vendor ticket/invoice when the merchant also declines use of the SF44 and uses its own invoice/receipt. **(T-3)** Refer to DoDM 4140.25-M, Vol. III for guidance on completion of the SF44. Fuel purchases will be documented on a separate SF44 from ground services and other authorized products since the merchant must invoice Defense Energy Support Center for the fuel portion of the invoice and the customer home station payment office for any non-fuel product and services. **(T-3)**

4.14. Minor Maintenance Actions. When authorized by the terms of the performance work statement in the maintenance contract, MAJCOMs may train and certify flight engineers in minor maintenance actions using a syllabus approved by the MAJCOM Training Branch and Weapon System Team. After certification, flight engineers may perform minor maintenance and servicing within the scope of the syllabus when away from home station to allow continued mission execution or return flight for maintenance actions.

4.14.1. When authorized by the maintenance group commander, PICs will inspect minor maintenance action performed by certified flight engineers and sign off red-X discrepancies prior to flight in accordance with T.O. 00-20-1. **(T-2)** All maintenance, servicing, and post-maintenance operational or leak checks, and the exceptional release must be performed in accordance with T.O. 00-20-01 and applicable technical manuals prior to resuming flight operations. **(T-1)**

4.14.2. Certified flight engineers will have a tool kit on board for all flights departing the local traffic pattern. **(T-3)** Individual units will establish requirements for tools/parts to be included in these kits. **(T-3)** As a minimum, the kit will include enough tools to remove and install chip detectors. Tool accountability will be performed in accordance with DAFI 21-101, *Aircraft and Equipment Maintenance Management*, and applicable supplements. **(T-2)**

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

4.16. Standard Configurations. Standard configurations will be in accordance with MAJCOM and unit local procedures. **(T-2)** Each flying unit will publish diagrams and mission equipment lists for each configuration used by the unit. **(T-2)** Prepare a DD Form 365-4 in accordance with **paragraph 3.11** for each of these configurations. **(T-3)** Additional special mission equipment may be added at the option of the unit commander. **(T-3)** All equipment authorized for and installed on

the aircraft will be categorized and managed in accordance with applicable Air Force Instructions. **(T-2)** Aircraft will not be modified to secure and/or install equipment unless authorized by aircraft technical orders or applicable Air Force regulations. **(T-2)**

4.16.1. Cargo/Equipment. Securing life support/medical equipment/medical kits with seat belts is authorized. In addition, items weighing less than 250 pounds that require constant access, such as navigation or mission kits, may be secured with seat belts or to the floor tie down rings using lanyards or carabiners that are rated for the restraint of cargo. Ensure cargo equipment does not exceed the cabin floor loading capacity of 50 pounds per square foot. Secure cargo/equipment items not requiring rapid removal during an aircraft or medical emergency with devices identified in T.O. 13C2-1, *Cargo Tie-Down Equipment*, and the flight manual. Do not modify tie down devices in any fashion.

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

4.16.3. Deviations. Unit commanders may authorize deviations from the standard configuration.

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

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

4.17. 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)**

4.17.1. 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.

4.18. Obstacle Clearance. Prior to maneuvering the helicopter in close proximity to obstacles, the aircrew will ascertain that the area is clear. **(T-3)** Whenever aircraft clearance (including rotor tip path plane) is 25 feet or less, the scanner will inform the pilot of the clock position relative to the nose of the aircraft and estimated distance to the obstacle from the nearest part of the aircraft (e.g., “Tree, nine o’clock, 20 feet” or “fence, seven o’clock, eight feet from the tail”). **(T-3)**

4.18.1. During en route flight, 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 en route altitude until obstacle clearance is assured. **(T-3)**

4.19. Altitude Restrictions. Aircrew will conduct all operations at or above 500 feet AGL or above water level (AWL) except when lower altitudes are required for takeoff, departure, arrival, landing, operational missions, training flights in approved areas, approved exercise missions, or when directed lower by a FAA/NACO Helicopter Route Chart. **(T-2)**

4.19.1. Compute an MSA for each leg of a route as required by AFMAN 11-202V3. **(T-3)** For flights conducted in a designated low-level area, one MSA may be computed for the planned area of operation. To compute an MSA, add 1,000 feet (2,000 feet in mountainous terrain) to the elevation of the highest obstruction to flight within 5 NM of the route centerline and round up to the next 100-foot increment. Note: The MSA fulfills the emergency route abort altitude requirements in AFMAN 11-202V3.

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

4.19.3. Operational Searches. Altitudes are determined by the PIC.

4.19.4. Training Searches. For search training below 500 feet AGL, aircrew must be in a surveyed low-level area. **(T-3)** Aircrew will conduct search training no lower than 100 feet AHO. Aircrew will not conduct night unaided search training. **(T-3)**

4.19.4.1. Low-Level Flight**.** En route flight below 500 feet AGL or AWL is considered low-level. Published FAA/NACO helicopter routes are not considered low-level. Two operational radio altimeters are required for all low-level flight. **(T-2)**

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

4.19.4.3. During en route flight over water, aircrew will fly no lower than 50 feet AWL during the day or 150 feet AWL at night with NVGs. **(T-2)**

4.20. Unprepared Landing Area Procedures. Operations will be in accordance with the procedures for helicopter landing areas in AFMAN 11-202V3 and DAFMAN 13-217, *Drop Zone, Landing Zone, and Helicopter Landing Zone Operations.* **(T-2)** For all tactical and non-tactical operations to unprepared or unfamiliar landing areas, aircrews must analyze winds, power margin, hazards, and approach and departure plan. **(T-2)** Only one site analysis is required during successive approaches when conditions are equal to or better than previous approaches to the same area.

4.20.1. Prepared surfaces (e.g., hospital helipads) are posted in the DoD Flight Information Publication, the FAA Airport Data and Information Portal, or host-nation equivalents. All other locations are considered unprepared. The PIC is responsible for determining the weight bearing capacity and structural limits (if applicable) of the landing location prior to use.

4.21. High and Low Reconnaissance.

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

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

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

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

4.21.2. Aircrew will overfly the landing area and begin the high reconnaissance at a minimum of 500 feet above landing site (ALS). **(T-3)** Aircrew may descend to no lower than 100 feet AHO after the initial overflight if necessary to analyze elements affecting the landing zone (LZ) (e.g., winds, terrain, etc.). To the maximum extent possible for the high reconnaissance, aircrew should maintain above minimum safe single engine airspeed. If safe single engine airspeed is not available, to the maximum extent possible aircrew should maintain at or above minimum rate of descent airspeed. If flying below minimum safe single engine airspeed, or if single engine airspeed is unavailable, the PIC will ensure a viable escape route is briefed. **(T-3)**

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

4.22. Night Operations. Warning: Lack of sufficient illumination may prevent NVG contour operations in otherwise VMC conditions. **Warning:** NVGs worn in very low illumination conditions can lead to induced motion illusions and spatial disorientation.

4.22.1. The decision on whether sufficient illumination exists to complete the mission rests with the PIC. The PIC will factor terrain, crew experience, and mission complexity into the risk assessment and determine sufficient illumination to safely identify terrain and hazards for the planned NVG flight profile. **(T-3)**

4.22.2. The unit commander may authorize operations into unlit prepared landing areas provided the crew is aware of all obstacles and aircraft lighting provides sufficient illumination to clearly see the approach path, landing surface, and obstacles. Night operations into unlit unprepared landing areas will only be conducted using NVGs. **(T-3)**

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

4.22.4. At least one radio altimeter must be operational for night operations (aided and unaided). **(T-2)** A radio altimeter miscompare is considered a failure of one radio altimeter.

4.22.5. NVG flights require one visible landing light and one of the following: an operational FLIR or a steerable infrared landing light. **(T-2)** The external sponson emergency lights do not satisfy the visible light requirement.

4.22.6. Landing lights will be on for all unaided night takeoffs and landings unless safety, weather, excessive glare, or operational requirements dictate otherwise. **(T-2)**

4.23. Aircraft Lighting. Aircraft lighting will be in accordance with AFMAN 11-202V3. Aircraft may operate in restricted areas and warning areas with reduced lighting in accordance with AFMAN 11-202V3 and FAA exemptions. Refer to MAJCOM guidance for aircraft lighting waivers.

4.23.1. Aircraft not operating in a warning/restricted area or under a waiver will operate with the following configurations: **(T-2) Exception:** Lighting may be reduced if it creates a hazard to the aircrew.

4.23.1.1. Single Ship Operations. Overt position lights and anti-collision light. **(T-2)**

4.23.1.2. Formation Operations. The lead aircraft will operate with overt or covert position lights, anti-collision light usage is optional. The wingman or last aircraft in the formation will operate with overt position lights and the anti-collision light. **(T-2)** If external lighting creates a hazard, crews should adjust formation spacing before considering reduced lighting.

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

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

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

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

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

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

4.25. Maintenance Debriefing. The PIC or representative will debrief maintenance personnel on the condition of the aircraft and equipment following flight. **(T-2)** Make the following entries in the AFTO Form 781A, in addition to those required in T.O. 1H-139(M)A-1, when appropriate:

4.25.1. Aircraft flown within 10 NM of saltwater. **(T-2)**

4.25.2. Aircraft subject to salt spray. **(T-2)**

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

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

4.25.5. Number of takeoff and landing cycles encountering brownout conditions. **(T-2)**

Chapter 5

CONTACT PROCEDURES TRAINING

5.1. Prohibited Training Maneuvers. In addition to T.O. 1H-139(M)A-1 restrictions, the following procedures/maneuvers are prohibited during training in the aircraft:

5.1.1. Actual in-flight engine shutdown. **(T-1)**

5.1.2. Blade stall, vortex ring state, and power settling unless part of a MAJCOM-approved training plan. **(T-1)**

5.1.3. Dual electronic engine control (EEC) malfunctions. **(T-1)**

5.1.4. Hydraulic system malfunctions (i.e., actuating hydraulic shutoff valve). **(T-2)**

5.1.5. Autorotations. **(T-1) Exception:** FCF, FCF training, and as specified in **paragraph 5.3.3**.

5.1.6. Actuating the engine mode switch or engine control lever to IDLE during flight.

5.2. Contact Operations. Refer to T.O. 1H-139(M)A-1 and AFTTP 3-3.MH-139A, *Combat Fundamentals – MH-139A*, for detailed maneuver parameters.

5.2.1. Category A procedures are performed in accordance with the flight manual.

5.2.2. Category B Takeoffs.

5.2.2.1. Vertical Takeoff. Set rotor speed (N_R) to 102 percent. Initiate from the ground or 5-foot hover using a target power index (PI) value of hover power plus 23 percent or as specified by the IP/EP and a simulated 100-foot obstacle. Terminate the maneuver when clear of the simulated obstacle and at the maximum rate of climb airspeed (V_Y).

5.2.2.2. Rolling Takeoff. Set N_R to 102 percent. Initiate from the ground using a target PI value of 10 percent below 5-foot hover power. Terminate the maneuver when at V_Y.

5.2.3. Traffic Pattern. If a rectangular pattern is flown, aircrew should fly the downwind leg at 500 feet AGL and an airspeed as briefed by the PF. During the turn to base, aircrew will descend to 300 feet AGL and slow the aircraft to 80 knots indicated airspeed (KIAS). **(T-3)** These altitudes will be used whenever possible if local conditions permit, otherwise comply with appropriate local traffic patterns. **(T-3)**

5.2.4. Category B Approaches.

5.2.4.1. Normal Approach. Initiate from 300 feet AGL and 80 KIAS using an apparent 30-degree approach angle. **(T-2)** Terminate on the ground or in a hover. **(T-2)** When terminating to a touchdown, ensure flight manual touchdown limits and pitch angle are not exceeded. **(T-1)**

5.2.4.2. Confined Area Approach. Initiate from 300 feet AGL and 30 KGS using an apparent 45-degree approach angle. **(T-2)** Terminate on the ground or in a hover. **(T-2)** When terminating to a touchdown, ensure flight manual touchdown limits and pitch angle are not exceeded. **(T-1)**

5.2.4.3. Rolling Landing. Use an entry airspeed no less than safe OEI airspeed or 80 KIAS if safe OEI airspeed is not available. **(T-2)** Ensure parking brake is OFF. **(T-1)** For training use a maximum touchdown speed of 40 KGS. **(T-1)**

5.2.5. Rejected Takeoff/Balked Landing. Rejected takeoff/balked landing procedures may be practiced by notionally limiting torque available on both engines. The maneuvers are executed in accordance with the flight manual for the type of maneuver being flown (e.g., confined area takeoff).

5.2.5.1. When limiting torque available, limit PI to a simulated all engines operating (AEO) maximum torque (e.g., 80 percent PI all AEO simulates 160 percent power available OEI). **(T-2)**

5.2.6. Degraded AP Operations. Initiate on the ground, in a hover (greater than 15-feet AGL), or in straight and level flight at a minimum of 500 feet and 80 KIAS. **(T-2)** Crews are only permitted to deactivate attitude mode (i.e., stability augmentation system only) when performing degraded AP operations except as authorized in **paragraph 5.3.2**. **(T-2)**

5.3. Instructor-Led Contact Operations. Instructor-led contact maneuver training should emphasize degraded aircraft handling over maneuver initiation. Accomplish these maneuvers to runways, taxiways, helipads, or other areas approved by the unit commander and identified in the local **Chapter 8** supplement. Units will establish procedures to ensure Aircraft Rescue and Fire Fighting support is readily available during instructor-led contact maneuver training. **(T-2)** Aircrews will not accomplish instructor-led contact maneuver training while operating at civil airfields unless authorized in a letter of agreement. **(T-2)** The following maneuvers will only be conducted during day VMC with an IP/EP designated on the flight orders and at a set of flight controls: **(T-2)**

5.3.1. OEI Training. OEI training with an instructor may be practiced using the OEI training mode in accordance with the flight manual. When using the OEI training mode, do not initiate the maneuver if the Weight-Altitude-Temperature performance charts for Category A Training Procedures do not allow for the planned type of takeoff or landing. **(T-2)**

5.3.2. Degraded AP Operations. Instructors may deactivate any combination of the following automatic flight control system components: attitude mode, stability augmentation system, cyclic force trim, yaw/collective force trim, and one or both APs. Entry parameters are in accordance with **paragraph 5.2.5**. **(T-2)**

5.3.3. Autorotations. FCF-certified pilots or pilots undergoing FCF certification training may perform practice autorotation checks as outlined in T.O. 1H-139(M)A-6CF-1. Initiate at a minimum of 2,000 feet AGL and 80 KIAS. **(T-2)** Initiate the recovery at approximately 1,000 feet AGL, terminating the maneuver no lower than 500 feet AGL. **(T-2)**

5.4. Simulated Emergency Procedures. Emergency procedures will not be accomplished in the aircraft unless specifically approved in a MAJCOM supplement. **(T-2)**

Chapter 6

INSTRUMENT PROCEDURES

6.1. Simulated Instrument Flight. Use of vision restricted devices (VRD) is permitted in accordance with AFMAN 11-202V3. Unless otherwise approved in a MAJCOM supplement, the only authorized device is the *Seitz Scientific VR2A*. **(T-2)** The following restrictions apply when using VRDs:

6.1.1. The minimum crew complement is two pilots and one flight engineer. Only one pilot may use a VRD a time. The pilot not using the VRD must be a designated safety crewmember.

6.1.2. VRDs must be used to a prepared surface with an instrument approach or departure in VMC conditions. VRDs may be used during instrument takeoff procedures, departure, en route, arrival, and on an instrument approach. When used during approaches, VRDs will not be used below the decision height (DH), decision altitude (DA), minimum descent altitude (MDA), or 200 feet above touchdown height, whichever is greater.

6.1.3. VRDs will not be used with passengers on board.

6.2. Instrument Advisory Calls. At a minimum, the PM will make the following advisory calls to the PF:

6.2.1. During Climb and Descent:

6.2.1.1. "500 feet above/below" assigned altitude, holding altitude, or approach fix (initial, final, and step down) altitudes. **(T-2)**

6.2.1.2. "100 feet above/below" assigned altitude, holding altitude, or approach fix (initial, final, and step down) altitudes. **(T-2)**

6.2.2. During Non-Precision Approaches.

6.2.2.1. "100 feet above MDA/DDA (derived decision attitude)". **(T-2)**

6.2.2.2. "Minimums" at MDA. **(T-2)**

6.2.2.3. "Runway in sight." Call when sufficient visual reference as outlined in AFMAN 11-202V3 is established and the aircraft is in a safe position to land. **(T-2) Note:** Ensure that this call is not made too soon when obstructions to vision (such as fog, haze, low stratus clouds, or other obscurations) are present. **(T-2)**

6.2.2.4. "Go-around." Call at missed approach point or DDA if the runway environment is not in sight or at any time the aircraft is not in a safe position to land. **(T-2)**

6.2.3. Precision Approaches and Approaches with Vertical Guidance (APV).

6.2.3.1. "100 feet above DH/DA". **(T-2)**

6.2.3.2. "Continue." Called at DA for a Category I approach when sufficient visual reference with the approach lighting system is established and the aircraft is in position to execute a safe landing. **(T-2)** The pilot may continue descent to 100 feet above threshold elevation or touchdown zone elevation using approach lights as reference.

6.2.3.3. "Land." Called at DH/DA if sufficient visual reference with the runway environment has been established and the aircraft is in position to execute a safe landing.

(T-2) If following "Continue", call "Land" no lower than 100 feet above threshold height touchdown zone elevation when the red termination bars or the red side row bars are visible and identifiable, and the aircraft is in a safe position to land. **(T-2)**

6.2.3.4. "Go-around." Call at DH/DA 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 safe position to land. **(T-2)**

6.2.4. Deviations. Any crewmember seeing deviations greater than 10 degrees of heading, 10 knots of airspeed, or 100 feet of altitude will inform the PF. **(T-2)** The PF will announce any deviations from prescribed procedures for the approach being flown. **(T-2)**

6.2.5. During Performance Based Navigation (PBN) operations, any aircrew member observing a primary flight display (PFD) or Required Navigation Performance (RNP) alert or RNP that does not coincide with phase of flight (RNP 2.0 for enroute, RNP 1.0 for Terminal, and RNP 0.3 for approach) will immediately advise the pilot flying. **(T-2)**

6.3. Unusual Attitude Training. The following guidance only applies to unusual attitude training conducted in the aircraft:

6.3.1. Accomplish during daylight hours in VFR conditions and only when an IP/EP is in command and at a set of flight controls.

6.3.2. Initiate at or above 1,000 feet AGL. Do not exceed 30 degrees of bank, a 20-degree nose high attitude, or 10-degree nose low attitude.

6.4. Performance Based Navigation.

6.4.1. The FMS meets the required navigation performance Technical Standard Order-C145e, *Airborne Navigation Sensors Using the Global Positioning System Augmented by the Satellite Based Augmentation System (SBAS)*, and AC 20-138D, *Airworthiness Approval of Positioning and Navigation Systems*. The FMS is approved for use during all phases of flight as the primary means of navigation.

6.4.1.1. The TA-24 Trimble global positioning system (GPS) is not equipped with SBAS aiding. If using the TA-24 as the primary means of navigation, pilots are required to accomplish a predictive receiver autonomous integrity monitor (RAIM) check with an off-board system for pre-flight planning, as well as review GPS Notice to Air Missions. **(T-0)**

6.4.1.1.1. Users should visit **https://sapt.faa.gov/default.php** and ensure the enroute, terminal and non-precision approach with baro-aiding RAIM summary charts show no outages. If outages exist, reference the interactive chart to determine the specific time and date of the outage. Alternatively the Navlog in Foreflight will also show RAIM status for a planned flight.

6.4.2. For flight planning purposes, the MH-139 has the following equipment. Ensure the appropriate blocks of the DD Form 1801 or International Civil Aviation Organization Flight Plan Form is annotated as outlined in accordance with the flight information publications.

6.4.2.1. Performance Based Navigation categories: B2–RNAV 5 GNSS, C2–RNAV 2 GNSS, D2–RNAV 1 GNSS, O2– RNP 1 GNSS, S2–RNP APCH with barometric vertical navigation, T1–RNP AR APCH with RF.

6.4.3. For flight planning purposes, the MH-139 aircraft has the following navigational equipment:

6.4.3.1. B–Localizer precision with vertical guidance (LPV), APV with SBAS.

6.4.3.1.1. D–Distance Measuring Equipment (DME).

6.4.3.1.2. F–Automatic Direction Finder (ADF).

6.4.3.1.3. G–Global Navigation Satellite System (GNSS).

6.4.3.1.4. R–PBN Approved.

6.4.3.1.5. S–Standard (very high frequency (VHF) omnidirectional radio [VOR], VHF radio telephone, instrument landing system [ILS]).

6.4.3.1.6. T–Tactical air navigation (TACAN).

6.4.3.1.7. U–Ultra High Frequency (UHF).

6.4.3.1.8. Y–VHF 8.33 kilohertz spacing

6.4.3.1.9. Z–Other. Specify NAV/SBAS in Item 18 of DD Form 1801, DoD International Flight Plan.

6.4.4. Surveillance categories: B1–ADS-B with dedicated 1090 megahertz out, L–Mode S transponder with aircraft identification, pressure-altitude, extended squitter, and enhanced surveillance. If ADS-B and Mode S is restricted for training and operations to Mode 3A/C only due to operations security concerns, modify the surveillance equipment to /C.

6.5. Category II Approaches. The MH-139 is certified and authorized for Category II ILS approaches. Minimum DH is based on radio altitude. Minimum RVR is 1200 feet. Aircrews will not execute a Category II ILS in instrument meteorological conditions (IMC) unless both pilots are current in Category II ILS. **(T-3)**.

Chapter 7

MISSION EMPLOYMENT

7.1. Low-Level Operations. Accomplish the T.O. 1H-139(M)A-1 AFTER TAKEOFF checklist prior to conducting low-level operations. Accomplish a BEFORE LANDING checklist prior to landing. Subsequent landings to the same area do not require a BEFORE LANDING checklist if the aircraft configuration does not change.

7.1.1. The terrain awareness and warning system (TAWS) and aural warning generator (AWG) will not be inhibited for extended cruise flight above 500 feet AGL. **(T-2)** Below 500 feet AGL, the TAWS should be set to low altitude mode to the maximum extent practical.

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

7.2. Countermeasure Procedures Training. Flight lead/PICs are responsible for ensuring that planned countermeasure procedure training takes into account aircraft performance, environmental conditions, formation spacing, and crew/flight experience. Do not conduct enroute countermeasure procedure training below 100 feet AHO/AWL. **(T-1)** If hovering, this does not preclude turning the tail of the helicopter to mitigate the threat or minor heading changes during takeoff.

7.3. Alternate Insertion/Extraction Operations. Personnel deploying from the aircraft via AIE must be qualified, certified, or under the direct supervision of a qualified instructor or equivalent except as specified in **paragraph 7.3.2.4**. **(T-2) Warning:** For all AIE operations, it is the PIC's responsibility to ensure all crewmembers are aware of the length of the rope(s). Failure to do so may result in serious injury to deploying personnel and/or damage to the aircraft. **Warning:** Devices used for non-live AIE training will be clearly distinguishable from operational equipment. **(T-2)** Training devices will be configured the same as operational equipment. **(T-2)** Only operational equipment will be used for live AIE operations. **(T-2)**

7.3.1. AIE Storage and Maintenance. Units will develop a program to ensure all unit-owned equipment is tracked, maintained and serviceable. **(T-2)** As a minimum units must ensure compliance with current manufacturer procedures as outlined in T.O. 00-25-245, *Testing and Inspection Procedures for Personnel Safety and Rescue Equipment*. **(T-2)** Units will document these procedures in their **Chapter 8**. **(T-2)**

7.3.2. Hoist Operations.

7.3.2.1. 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 will be actively controlled with a taut tag line to prevent spinning.

7.3.2.2. When the hoist is used for infiltration operations, before placing the cable under any load, the hoist operator will physically verify that the 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)**

7.3.2.3. The left cabin door will be closed prior to conducting live hoist operations.

7.3.2.4. Live Hoist Training. Accomplish live hoist training at the minimum altitude required to accomplish desired training.

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

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

7.3.2.4.3. Do not conduct live hoist training when the hoist operator's intercom is inoperative. **(T-1)**

7.3.2.4.4. Do not conduct simulated hoist emergency procedures training in conjunction with live hoist training. **(T-1)**

7.3.3. Non-Hoist AIE Operations.

7.3.3.1. Safety Observer. During live non-hoist AIE operations, an aircrew member or team member will be designated as the safety observer. **(T-1)** The safety observer will monitor the intercom and will be in a position to evaluate the safety of the operation(s) and take action to avoid a hazardous situation. **(T-1)** During NVG operations, the safety observer must ensure the rope 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 cause serious injury. During the hover, the safety observer must relay sufficient information to the pilots to ensure the ropes do not leave the ground during altitude deviations. **(T-1)**

7.3.3.2. Rope Master. The 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 rope master cannot safely determine operational parameters (aircraft altitude, drift, obstacles, and rope position), the rope master will coordinate with the safety observer for assistance. **(T-1)**

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

7.3.3.4. During live training deployments at night, chemical lights will be used to identify all ropes. **(T-3)** Chemical lights should be used to identify all ropes during non-live training. During operational missions, chemical light use will be at the discretion of the deploying team leader.

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

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

7.3.3.7. Fast Rope Insertion/Extraction System (FRIES) Operations. The deploying team is responsible for providing the ropes and assisting crewmembers in inspection and aircraft

rigging. An flight engineer will inspect aircraft rigging prior to deployment. **(T-2)** If requested by the deploying rope master, the aircraft may have a maximum forward ground speed of 5 knots.

7.3.3.8. Rappelling Operations. Deploying personnel are responsible for aircraft rigging and personnel hookup. The deploying team is responsible for providing rappel ropes, harnesses, and rappel devices. Once connected to the rappelling equipment, deploying personnel may release other restraints in preparation for the exit. An flight engineer will inspect aircraft rigging prior to deployment to ensure configuration complies with the following configuration:

7.3.3.8.1. The primary rapelling rope attachment point is the FRIES release mechanism. A secondary safety attachment point is required for all rappelling operations and will be attached to the FRIES bar shackle. **(T-2)** The secondary safety attachment point will be attached using locking/auto-locking carabineers with a minimum force criteria of 5,000 pounds or 23 kilonewtons. **(T-2)**

7.4. Weapons and Laser Employment. Units will ensure that weapon systems and laser employment procedures and training standards are included in the unit weapons and tactics training program. **(T-2)** Refer to AFMAN 11-214, AFTTP 3-3.MH-139, and local range procedures/restrictions for guidance. Units will ensure that detailed local weapons and laser procedures are included in their local **Chapter 8**. **(T-2)**

7.4.1. Blank ammunition fires will be in accordance with DESR 6055.09_AFMAN 91-201, *Explosive Safety Standards* and coordinated through the host installation weapons safety office.

7.5. Formation.

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

7.5.2. The minimum separation between the closest portions of any two helicopters in a formation is one rotor diameter. Formation flights with dissimilar aircraft are authorized when all participating crewmembers are briefed and are thoroughly familiar with the other aircraft's performance and tactics. Rotor disk separation will be based on the largest rotor disk diameter **(T-2)**

7.5.3. Taxi aircraft with a minimum of two rotor diameters from main rotor to tail rotor. **(T-2)** This does not apply to aircraft parked in designated spots or lined up for departure.

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

7.5.5. Tactical Formation Maneuvering. When flying in formation with less than three rotor diameter separation, the only authorized tactical formation maneuvers are: shackle, split, cover, and dig. **(T-1)**

7.6. Formation Contingencies.

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

7.6.1.1. 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.

7.6.1.2. 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.

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

7.6.2.1. If any flight member/element calls "Blind," then the other flight member/element will acknowledge with "Visual" and an informative position call or acknowledge with "Blind". **(T-2)** If any member calls "Blind with SA" the flight lead will direct "Continue" with heading or other briefed de-confliction plan. **(T-2)**

7.6.2.2. If the other flight member/element acknowledges with "Blind", the flight lead will immediately take action to ensure separation between flight members/elements. **(T-2)** 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-2)** Climbs/descents through the de-confliction altitude should be avoided if possible.

7.6.2.3. 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 non-visual means. **(T-2)**

7.6.2.4. If visual contact is not regained, the flight lead will take additional positive action to ensure flight path de-confliction within the flight to include a knock-it-off if necessary. **(T-2)** Scenario restrictions such as sanctuary altitudes and/or adversary blocks must be considered. **(T-2)**

7.6.2.5. When using visual cues as the sole means of ensuring aircraft separation, the formation will maintain altitude separation until visual is regained or non-visual separation methods are coordinated. **(T-2)**

7.6.3. Lost Wingman Procedures. When a wingman goes inadvertent IMC and loses sight of the preceding aircraft, all members of the formation must react quickly and precisely to prevent a midair collision. **(T-3)**

7.6.3.1. The aircraft losing visual contact will call, "Formation Call Sign, Position, Lost Wingman." **(T-3)** Formation lead will immediately initiate the breakup by announcing "Formation Call Sign, Execute," the type of breakup (i.e., mountainous or non-mountainous) unless prebriefed, base "heading" (magnetic), base "airspeed", and base "MSA". **(T-3)** Formation lead will maintain base parameters and all wingmen will act based on the base heading, airspeed and MSA. **(T-3)** Wingmen will acknowledge lead's call. Once the formation executes the IMC breakup, lead will announce or brief any changes to magnetic headings, airspeed, and MSA. **(T-3)**

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

7.6.5. 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-3)** If visual contact is lost or aircraft enter IMC, execute lost wingman procedures for the original position in the formation.

7.6.6. Non-Mountainous Procedures. (**Figure 7.1**.) The following lost wingman procedures are for non-mountainous operations:

7.6.6.1. Formation lead maintains base heading, airspeed, and climbs to MSA.

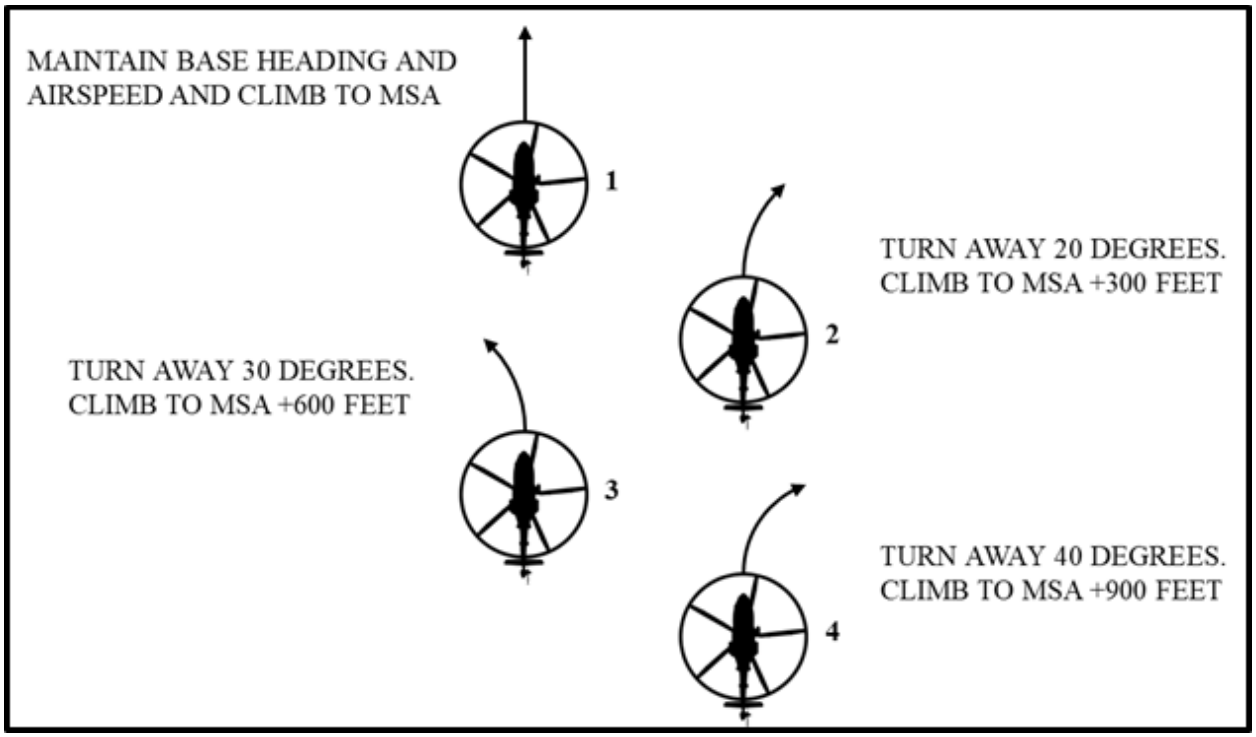
7.6.6.2. Dash 2 will initiate a turn away from the preceding aircraft to a heading of 20 degrees from the base heading and climb to MSA plus 300 feet. **(T-3)**

7.6.6.3. Dash 3 will initiate a turn away from the preceding aircraft to a heading of 30 degrees from the base heading and climb to MSA plus 600 feet. **(T-3)**

7.6.6.4. Dash 4 will initiate a turn away from the preceding aircraft to a heading of 40 degrees from the base heading and climb to MSA plus 900 feet. **(T-3)**

7.6.6.5. Once altitude is reached, maintain offset heading for 30 seconds and then return to the base heading.

Figure 7.1. Non-Mountainous Procedures.



7.6.7. Mountainous Procedures. (**Figure 7.2**.) The following lost wingman procedures are for mountainous operations.

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

7.6.7.2. Dash 2 two will adjust to maintain announced airspeed minus 10 knots and climb 300 feet above MSA. **(T-3)**

7.6.7.3. Dash 3 three will adjust to maintain announced airspeed minus 20 knots and climb 600 feet above MSA. **(T-3)**

7.6.7.4. Dash 4 will adjust to maintain announced airspeed minus 30 knots and climb 900 feet above MSA. **(T-3)**

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

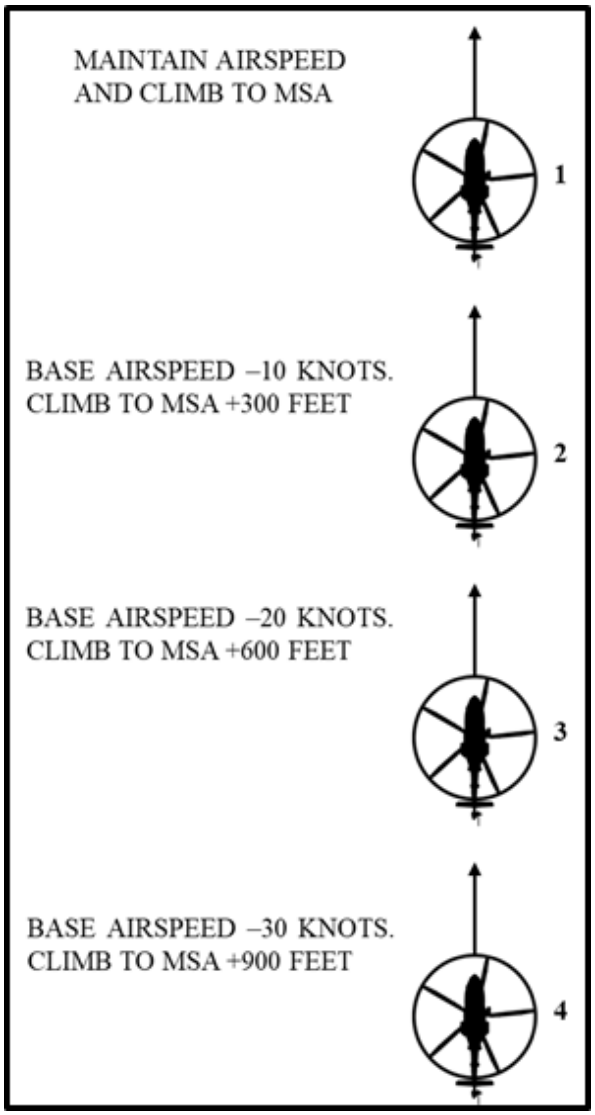
7.7. Water Operations.

7.7.1. The primary method of accomplishing water operations is using the flight director. The following restrictions apply when the flight director is not being used:

7.7.1.1. Conduct water training a minimum of 500 feet offshore.

7.7.1.2. Observation passes will be flown at a minimum of 50 feet AWL and at or above effective translational lift. **(T-2)** Observation passes will not be performed at night.

Figure 7.2. Mountainous Procedures.



7.7.1.3. Maintain a minimum of 50 KIAS unless on approach or departure. **(T-2)** On departure, delay any turns until above effective translational lift and 100 feet AWL. **(T-2)** Do not descend below 100 feet AWL until established on final. **(T-2)**

7.7.1.4. During NVG water operations, do not exceed 30 degrees of bank angle when below 100 feet AWL.

7.7.1.5. Both radio altimeters must be operational.

7.7.2. Water operations with live deployment of personnel require coverage by boat or hoist-equipped helicopter. Helicopter covership will remain within 5 NM of the deploying helicopter and will maintain constant line-of-sight communications. **(T-2)** The safety boat and the deploying helicopter will maintain visual contact at all times and minimize the distance between the boat and deploying team to ensure prompt response. **(T-2)** All live swimmer water operations require positive radio contact. **(T-2)** If radios are unavailable or inoperable, swimmer team lead will carry an overt and pre-briefed emergency signal. **(T-2)**

7.7.3. Maximum helocast deployment altitude is 10 feet AWL and 10 KGS. Minor deviations are acceptable only with concurrence of the PIC and deploying personnel. Hoist extraction devices will be readily accessible prior to helocast deployments. **(T-2)**

Chapter 8

LOCAL OPERATING PROCEDURES

8.1. Requirements. This chapter provides a consolidated framework for units to supplement local operating procedures. Procedures herein will not be less restrictive than those contained elsewhere in this publication, nor is this chapter intended to be a single source document for procedures contained in other directives or instructions. Avoid unnecessary repetition of guidance provided in other established directives. Individual unit local operating procedures are required for all MH-139 units. If more than one MH-139 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. Off-Station Procedures

8.2.9.7. Instrument Procedures.

8.2.9.8. Hot/Jammed Gun Procedures

8.2.9.9. Hung Flare Procedures

8.2.9.10. Bird/Wildlife Aircraft Strike Hazard (BASH) program guidance.

8.2.9.11. Environmental Restrictions to Flight Operations (applicable to unit operating locations).

8.2.9.12. Taxi/Parking Restrictions/Procedures.

8.2.9.13. Alert Procedures.

8.2.9.14. Traffic Pattern, Landing Area, and Instructor-Led Contact Training Locations.

8.2.9.15. Operations Security (OPSEC)PSEC & COMSEC Procedures.

8.2.9.16. AIE Device Management

8.2.9.17. Hot Refueling Procedures

8.2.9.18. Squadron Briefing Standards (may be published as a separate document)

ADRIAN L. SPAIN, Lt Gen, USAF
Deputy Chief of Staff, Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

14 CFR Section 91.157, *Special VFR weather minimums*

AC 20-138D, *Airworthiness Approval of Positioning and Navigation Systems,* 28 March 2014

TSO-C145e, *Airborne Navigation Sensors Using the Global Positioning System Augmented by the Satellite Based Augmentation System (SBAS),* 5 May 2017

DESR6055.09_AFMAN 91-201, *Explosives Safety Standards*, 27 May 2020

DoD 4140.25-M, Vol. III, *DoD Management of Bulk Petroleum Products, Natural Gas, and Coal*, 26 February 2009

DoDD 4500.56, *DoD Policy on the Use of Government Aircraft and Air Travel*, 14 April 2019

DoDI 3003.01, *DoD Support to Civil Search and Rescue (SAR),* 26 September 2011

DoDM 5100.76_DAFMAN 31-101V2, *Physical Security of Sensitive Conventional Arms, Ammunition, & Explosives (AA&E),* 19 February 2020

DoDM 5200.01V3_AFMAN 16-1404V3, *Information Security Program: Protection of Classified Information*, 12 April 2022

AFPD 10-45, *Support to Civil Search and Rescue*, 10 September 2020

AFPD 11-2, *Aviation Service*, 30 April 2019

DAFPD 24-6, *Transportation*, 12 October 2022

AFI 10-801, *Defense Support of Civil Authorities*, 28 January 2020

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure,* 3 May 2022

AFI 11-235, *Specialized Refueling Operations*, 20 May 2019

DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 19 December 2023

DAFI 21-203, *Equipment Inventory, Status and Utilization Reporting*, 31 October 2022

AFI 31-117, *Arming and Use of Force by Air Force Personnel*, 5 August 2020

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

AFI 65-503, *US Air Force Cost and Planning Factors,* 12 July 2018

AFMAN 11-2MH-139AV1, *MH-139A—Aircrew Training,*

AFMAN 11-202V3, *Flight Operations*, 9 January 2022

AFMAN 11-214, *Air Operations Rules and Procedures*, 28 November 2022

AFMAN 11-218, *Aircraft Operations and Movement on the Ground*, 4 April 2019

AFMAN 11-301V1, *Aircrew Flight Equipment (AFE),* 30 May 2023

AFMAN 11-301V2, *Management and Configuration Requirements for Aircrew Flight Equipment (AFE)*, 12 February 2020

DAFMAN 11-401, *Aviation Management*, 26 October 2020

DAFMAN 11-402, *Aviation and Parachutist Service*, 24 January 2019

DAFMAN 13-201, *Airspace Management*, 9 December 2020

DAFMAN 13-217, *Drop Zone, Landing Zone, and Helicopter Landing Zone Operations*, 21 April 2021

AFMAN 31-101V1, *Integrated Defense (ID) Planning*, 11 March 2020

AFMAN 31-129, *USAF Small Arms and Light Weapons Handling Procedures*, 1 January 2020

AFTTP 3-3.MH-139A, *Combat Aircraft Fundamentals (U) – MH-139A Helicopter*, 5 January 2024

T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*, 15 September 2023

T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, 28 December 2023

T.O. 00-25-245, *Testing and Inspection Procedures for Personnel Safety and Rescue Equipment*, 1 June 2023

T.O. 1-1B-50, *Intermediate and Depot Maintenance, Aircraft Weight and Balance*, 12 September 2023

T.O. 1H-139(M)A-1, *Flight Manual, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 1H-139(M)A-1CL-1, *Pilot's Abbreviated Flight Crew Checklist, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 1H-139(M)A-1CL-2, *Flight Engineer Flight Crew Checklist, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 1H-139(M)A-5-1, *Flight Manual Sample Basic Weight Checklists, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 1H-139(M)A-5-2, *Loading Data Manual, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 1H-139(M)A-6CF-1, *Acceptance and Functional Check Flight Procedures, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 1H-139(M)A-6CL-1, *Acceptance and Functional Check Flight Procedures Checklist, USAF Series MH-139A Helicopter*, 31 January 2024

T.O. 13C2-1, *Cargo Tie-Down Equipment*, 25 February 2016

T.O. 14-1-1, *U.S. Air Force Aircrew Flight Equipment Clothing and Equipment*, 22 November 2023

Adopted Forms

AF Form 70, *Pilot's Flight Plan and Flight Log*

AF Form 664, *Aircraft Fuels Documentation Log*

AF Form 1067, *Modification Proposal*

AFTO Form 244, *Industrial/Support Equipment Record*

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

AFTO Form 781B, *Communication Security Equipment Record*

AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance*

DAF Form 847, *Recommendation for Change of Publication*

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

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

DD Form 1801, *DoD International Flight Plan*

DD Form 1896, *DoD Fuel Identaplate*

Standard Form 44, *Purchase Order-Invoice-Voucher*

Abbreviations and Acronyms

AA&E—Arms, Ammunition, & Explosives

ADF—Automatic Direction Finder

ADS-B—Automatic Dependent Surveillance-Broadcast

AEO—All Engines Operating

AFDW—Air Force District Washington

AFE—Aircrew Flight Equipment

AFGSC—Air Force Global Strike Command

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Document

AFRCC—Air Force Rescue Coordination Center

AGL—Above Ground Level

AHO—Above Highest Obstacle

AIE—Alternate Insertion/Extraction

AIMS—Air Traffic Control Radar Beacon System, Identification Friend or Foe, Mark XII/Mark XIIA, Systems

ALS—Above Landing Site

ALVL—Autolevel

AP—Autopilot

APV—Approach with Vertical Guidance

ATC—Air Traffic Control

AWBS—Automatic Weight and Balance System

AWG—Aural Warning Generator

AWL—Above Water Level

BASH—Bird/Wildlife Aviation Strike Hazard

CAS—Crew Alerting System

CG—Center of Gravity

COMSEC—Communications Security

CVRF—Cockpit Voice Recorder Function

DA—Density Altitude

DAF—Department of the Air Force

DAFMAN—Department of the Air Force Manual

DCO—Document Control Officer

DDA—Derived Decision Altitude

DH—Decision Height

DME—Distance Measuring Equipment

DoD—Department of Defense

DoDI—Department of Defense Instruction

DoDM—Department of Defense Manual

EEC—Electronic Engine Controller

EFB—Electronic Flight Bag

EGPWS—Enhanced Ground Proximity Warning System

EHS—Enhanced Surveillance

FAA—Federal Aviation Administration

FCF—Functional Check Flight

FDP—Flight Duty Period

FLIR—Forward-Looking Infrared

FMS—Flight Management System

FRIES—Fast Rope Insertion/Extraction System

GNSS—Global Navigation Satellite System

GPS—Global Positioning System

HAF—Headquarters Air Force

HDG—Heading Mode

HHQ—Higher Headquarters

ID—Integrated Defense, Identification

IFR—Instrument Flight Rules

ILS—Instrument Landing System

IR—Instrument Flight Rules Route

JMPS—Joint Mission Planning System

LPV—Localizer Precision with Vertical Guidance

LZ—Landing Zone

MAJCOM—Major Command

MDA—Minimum Descent Altitude

MEA—Minimum Enroute Altitude

MEDEVAC—Medical Evacuation

MEP—Mission Essential Personnel

MSA—Minimum Safe Altitude

MSL—Mean Sea Level

NACO—National Aeronautical Charting Office

NAF—Numbered Air Force

NAV—Navigation

NGA—National Geospatial Intelligence Agency

NM—Nautical Mile

NR—Rotor Speed

OCONUS—Outside Continental United States

OGE—Out of Ground Effect

ORM—Operational Risk Management

OSF—Operational Support Flier

PAC—Power Assurance Check

PBN—Performance Based Navigation

PFD—Primary Flight Display

PI—Power Index

PIC—Pilot in Command

PIN—Platform Identification Number

PMLO—Post-Maintenance Look Over

RAIM—Receiver Autonomous Integrity Monitor

RHT—Radio Altimeter Hold

RNP—Required Navigation Performance

RVR—Runway Visual Range

SAR—Search and Rescue

SBAS—Satellite Based Augmentation System

SF—Standard Form

SIPRnet—Secure Internet Protocol Router Network

SPINS—Special Instructions

SR—Slow Route

T.O.—Technical Order

TAWS—Terrain Awareness and Warning System

TOLD—Takeoff and Landing Data

TOP—Takeoff Power

TU—Transition Up

UHF—Ultra-High Frequency

USAF—United States Air Force

VFR—Visual Flight Rules

VHF—Very-High Frequency

VMC—Visual Meteorological Conditions

VOR—Very-High Frequency Omni-Directional Radio

VR—Visual Route

VRD—Vision-Restricting Device

VY—Maximum Rate of Climb Airspeed

WRALC—Warner-Robbins Air Logistics Center

Office Symbols

A3—Director of Operations

AFGSC/A3/6—Air Force Global Strike Command Director of Operations and Communications

AFLCMC/WIH—Air Force Lifecycle Management Center Helicopter Program Office

AFLCMC/WNU—Air Force Life Cycle Management Center, Human Systems Division

HG/CC—Helicopter Group Commander

MXG/CC—Maintenance Group Commander

OG/CC—Operational Group Commander

SQ/CC—Squadron Commander

SQ/DO—Squadron Operations Officer

WG/CC—Wing Commander

Terms

Aircrew Member—An individual, designated on the flight authorization who is an aircrew member as explained in AFPD 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.

Direct Supervision—An aircrew member is considered under direct supervision when flying with an instructor in the same crew position. For pilots, the instructor must occupy one of the pilot seats. For other aircrew positions, the instructor must be readily available to assume the primary duties if required.

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

Functional Check Flight—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 MDS specific -6 TO. FCF checks or maneuvers can only be accomplished by current and qualified aircrew members.

Hot Gun—A situation when a live round or rounds cannot be cleared from a weapon in flight, the gun cannot be mechanically and electrically rendered safe, and a probability of inadvertent firing exists.

Hot Refueling—Fuel on-load from any fuel source with one or more aircraft engines operating.

Interfly—Interfly is the exchange and/or substitution of aircrew members from separate MAJCOMs to accomplish flying missions.

Intrafly—Intrafly is the exchange and/or substitution of aircrew members from separate units under the same MAJCOM to accomplish flying missions.

Low-Level Operations—Flight conducted below 500 feet AGL or AWL unless directed lower by published FAA/NACO helicopter routes.

Minimum Safe Altitude (MSA)—Altitude designed to provide positive IMC terrain clearance during emergency situations that require leaving the low-level structure.

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

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

Pilot Flying—The pilot maneuvering the aircraft and responsible to control and monitor the aircraft's flight path and energy state, including autoflight systems.

Pilot-in Command—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.

Power Margin—The difference between power available and power required to perform the intended maneuver.

Pilot Monitoring—The pilot not in direct maneuvering control of the aircraft who is responsible to actively monitor the aircraft's flight path and supports the pilot flying by accomplishing non-flight actions.

Safety Crewmember—An experienced aircrew member, who is not instructor qualified, but is authorized by the SQ/CC to supervise specific flight and/or simulator events for qualified but non-current aircrew.

Should—Indicates non-mandatory recommended method of accomplishment.

Tactical Operations—A mission designed to perform the unit's designed operational capability mission set. These operations may consist of low-level, normal flight, or a combination thereof on training, exercise, or operational missions.

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

Will—Indicates a mandatory requirement.

Attachment 2

GENERAL AIRCREW BRIEFING

A2.1. This briefing is designed for single ship, non-mission flight operations. Briefing format is a guide and there is no requirement for items to be briefed in sequence. Items not applicable to the flight profile may be omitted. Additional topics not covered in this guide may also be briefed. Use Specialized Briefings or Checklists when applicable.

A2.2. Time Hack.

A2.3. Roll Call.

A2.4. Classification.

A2.5. Mission.

A2.5.1. Sortie Objective(s)

A2.5.2. Training Objective(s)

A2.5.3. Desired Learning Objectives

A2.5.4. Sequence Of Events

A2.6. Flight Planning.

A2.6.1. Weather

A2.6.1.1. Takeoff, En Route, Destination

A2.6.2. NOTAM, FCIF, Go/No-Go, Special Interest Items

A2.6.3. Aircraft Number, Call Sign, Spare, Parking Plan

A2.6.4. Fuel Load, Mission Capable Fuel, Bingo Fuel

A2.6.5. Aircraft Configuration

A2.6.5.1. Passengers/MEP

A2.6.6. Weight And Balance, Performance Data (TOLD)

A2.6.7. Timeline

A2.6.7.1. Seats, Takeoff, Land, Duration

A2.6.8. Bump Plan/Abort Criteria

A2.7. Route Of Flight/Hazards to Flight.

A2.7.1. Departure, Description of Route, Arrival

A2.7.2. Altitude and Airspeed

A2.7.3. Hazards

A2.7.3.1. Obstructions

A2.7.3.2. Mid-Air Collision Avoidance

A2.7.3.2.1. High Density Areas, sUAS, etc.

A2.7.3.3. Bird Hazard

A2.7.4. Inadvertent IMC (MSA)

A2.8. Equipment.

A2.8.1. Flight Publications, Charts, EFB

A2.8.2. Aircrew Flight Equipment

A2.8.2.1. NVGs

A2.8.2.2. LPU/SEA Bottle

A2.8.3. Personal Equipment

A2.8.4. Special Mission Requirements

A2.8.5. Classified Material/COMSEC

A2.9. Crew Duties and Responsibilities.

A2.9.1. Primary Duties

A2.9.2. Changing Control of Aircraft

A2.9.3. Emergencies

A2.9.4. Scanning

A2.9.5. Inadvertent IMC

A2.9.6. Anti-Hijacking

A2.10. Additional Briefing Items.

A2.10.1. Applicable Specialized Briefing(s)

A2.10.2. Risk Assessment

A2.10.3. Topics of the Day

A2.11. Questions.

A2.12. Update Time/Location.

Attachment 3

MISSION BRIEFING

A3.1. This briefing guide is intended for mission flight events (e. g., low-level, formation, etc.). Briefing format is a guide and there is no requirement for items to be briefed in sequence. Items not applicable to the flight profile may be omitted. Additional topics not covered in this guide may also be briefed. Use Specialized Briefings or Checklists when applicable.

A3.2. Time Hack.

A3.3. Roll Call.

A3.4. Classification.

A3.5. Mission Introduction.

A3.5.1. Mission Objective(s)

A3.5.2. Training Objective(s)

A3.5.3. Desired Learning Objectives

A3.5.4. Mission Overview/Sequence of Events

A3.5.5. Smart Packs, Kneeboard Cards, Frag Card

A3.6. Flight Planning.

A3.6.1. Weather

A3.6.1.1. Takeoff, En Route, Destination

A3.6.2. NOTAM, FCIF, Go/No-Go, Special Interest Items

A3.6.3. Aircraft Number(s), Call Sign(s), Spare, Parking Plan

A3.6.4. Fuel Load, Mission Capable Fuel, Bingo Fuel

A3.6.5. Aircraft and Load Configuration

A3.6.5.1. Special Mission Equipment (AIE Devices, Weapons/Ordnance, CBRNE)

A3.6.5.2. Passengers/MEP

A3.6.6. Weight and Balance, Performance Data (TOLD)

A3.6.7. Timeline

A3.6.7.1. Seats, Communication Check-In, Takeoff, Land, Duration

A3.6.8. Bump Plan/Abort Criteria

A3.6.9. Training Rules

A3.6.10. Contracts

A3.7. Pre-Departure.

A3.7.1. Communications Check-In

A3.7.2. Transponder/IFF Configuration

A3.7.3. Aircraft Lighting

A3.7.4. Start/Taxi Time, Taxi Route

A3.7.4.1. Power Assurance Check

A3.7.5. Lineup/Positions

A3.7.6. Goggle Up Procedures

A3.8. Departure.

A3.8.1. Communications Procedures

A3.8.2. Type Of Takeoff

A3.8.2.1. Airspeed and Rate of Climb

A3.8.2.2. Abort Plan

A3.8.3. Type Of Formation **Note:** Brief each en route segment and objective/terminal area plan in chronological order. For successive legs/phases, only the items that have changed need be briefed.

A3.9. En Route.

A3.9.1. Description Of Route

A3.9.2. Hazards

A3.9.3. Obstructions

A3.9.3.1. Mid-Air Collision Avoidance

A3.9.3.1.1. High Density Areas, sUAS, etc.

A3.9.3.2. Bird Hazard

A3.9.4. Altitude and Airspeed/Navigation Settings/Responsibilities

A3.9.5. Communications/Lighting

A3.9.6. Formation Procedures

A3.9.6.1. Type of Formation and Spacing

A3.9.6.2. Rejoin Procedures

A3.9.6.3. Lead Changes

A3.9.7. Countermeasure Procedures

A3.10. Terminal Operations.

A3.10.1. Objective/TOT

A3.10.2. Communications Procedures/Authentication Methods

A3.10.2.1. Ground Force Frequency/Call Sign

A3.10.3. Description of Objective

A3.10.4. Features (Elevation, Size, Slope, Suitability, Lighting)

A3.10.5. Hazards (Obstacles, Wind Considerations/Limitations, etc.)

A3.10.6. Performance Data

A3.10.7. Approaches and Landings

A3.10.7.1. Terminal Area Game Plan/Landing Zone Options

A3.10.7.2. Type of Formation and Spacing

A3.10.7.3. Aircraft Configuration and Lighting

A3.10.7.4. Landing Areas

A3.10.7.5. Type Of Landing (Airland, AIE – Hover Height)

A3.10.8. Sequence Of Events

A3.10.9. Go-Around Procedures

A3.10.10. Egress

A3.11. Contingencies.

A3.11.1. IMC Lost Wingman (MSA)

A3.11.2. VMC Blind

A3.11.3. Abort Criteria

A3.11.3.1. Weather

A3.11.3.2. Minimum Force Requirements

A3.11.3.3. Minimum Mission Equipment

A3.11.4. Lost/Degraded Communications

A3.12. Recovery.

A3.12.1. Arrival/Landing Procedures

A3.12.2. Description of Airfield/Landing Area

A3.12.3. Communications

A3.12.4. Taxi/Parking Plan

A3.12.5. Refuel Plan

A3.12.6. Other Items

A3.12.7. Aircraft Security

A3.12.7.1. Storage Of Classified Equipment and Weapons

A3.13. Equipment.

A3.13.1. Flight Publications, Charts, EFB

A3.13.2. Aircrew Flight Equipment

A3.13.2.1. NVGs

A3.13.2.2. Personal Weapons

A3.13.2.3. LPU/SEA Bottle

A3.13.2.4. ACDE

A3.13.3. Personal Equipment

A3.13.4. Special Mission Requirements

A3.13.5. Classified Material/COMSEC

A3.14. Crew Duties and Responsibilities.

A3.14.1. Primary Duties

A3.14.2. Changing Control of Aircraft

A3.14.3. Emergencies Actions/Intentions

A3.14.3.1. Takeoff

A3.14.3.2. En Route

A3.14.3.3. Terminal Area

A3.14.3.4. Recovery

A3.14.3.5. NVG Malfunction

A3.14.3.6. Crash Landing/Ditching (Land/Water)

A3.14.4. Scanning

A3.14.5. Inadvertent IMC

A3.14.6. Anti-Hijacking

A3.15. Additional Briefing Items.

A3.15.1. Applicable Specialized Briefing(s)

A3.15.2. Risk Assessment

A3.15.3. Topics of the Day

A3.16. Questions.

A3.17. Update Time/Location.

Attachment 4

ALERT STANDBY BRIEFING

A4.1. General. Use this briefing for assumption of an alert period. Conduct an update briefing addressing applicable changes every 24 hours or upon a change of conditions. At a minimum, the asterisk (*) items will be updated or verified current.

A4.2. Alert/Standby Period.

A4.2.1. *Situation/Intelligence

A4.2.2. Alert Type

A4.2.3. *Mission Status

A4.2.4. *Crew Location

A4.2.5. Flight Planning

A4.2.5.1. *Weather

A4.2.5.1.1. Takeoff, En Route, Destination

A4.2.5.1.2. Sun/Moon Data

A4.2.5.2. *NOTAM, FCIF, Go/No-Go, Special Interest Items

A4.2.5.3. Aircraft Numbers, Call Signs, Spare, Parking Plan

A4.2.5.4. Fuel Load, Mission Capable Fuel, Bingo Fuel

A4.2.5.5. Aircraft and Load Configuration

A4.2.5.6. Weight and Balance

A4.2.5.7. *Performance Data (TOLD)

A4.2.5.7.1. Departure, Terminal Area, Destination, Allowable Load

A4.2.5.8. *Risk Assessment

A4.3. Response Time.

A4.4. Notification Procedures.

A4.5. Launch/Scramble Procedures.

Attachment 5

POST FLIGHT AIRCREW DEBRIEFING

A5.1. Roll Call.

A5.2. Classification.

A5.3. Mission Objectives.

A5.4. Training Objectives.

A5.5. Desired Learning Objectives.

A5.6. Mission Accomplishments.

A5.6.1. Flight Discipline/Effectiveness

A5.7. Mission Reconstruction.

A5.7.1. Safety of Flight Issues, Unscheduled Knock-It-Offs or Terminates

A5.7.2. Reconstruct Major Events

A5.7.2.1. Critical Analysis, Debrief Focal Points, or Learning Points

A5.7.2.2. Identify Contributing Factors

A5.7.2.3. Contract Effectiveness

A5.8. Lessons Learned.

A5.9. Comments/Questions.

Attachment 6

ALTERNATE INSERTION/EXTRACTION BRIEFING

A6.1. Device(s) to be Used.

A6.2. Site Description/Hazards.

A6.3. Power Available/Required.

A6.4. Sequence of Events.

A6.4.1. Intended Hover Height

A6.4.2. Load/CG

A6.5. Protective Equipment.

A6.6. Communications (Air to Ground).

A6.6.1. Frequency

A6.6.2. Hand Signals

A6.7. Emergency Procedures.

A6.7.1. Aircraft Malfunctions

A6.7.2. Hoist Malfunctions

A6.7.2.1. Power Loss

A6.7.2.2. Oscillations/Pendulum

A6.7.2.3. Cable Cut Procedures

A6.7.3. AIE Malfunctions

A6.7.3.1. Emergency Procedures for Hung Rappeler

A6.7.4. Intercom Failure

A6.8. Crew Duties.

Table A6.1. Hoist Operator Hand Signals.

Action	Meaning
Open palm of hand indicating direction	Aircraft movement
Index finger in a circling movement overhead; point in the direction of flight	Survivor in and Secure, Ready for Takeoff; Go-Around
Clenched fist	Stop Aircraft; Cable Movement; Hold Hover
Clenched fist with thumb pointing up or down	Hoist Cable Up / Down
Fingers extended, joined moving and chopping motion against the opposite wrist	Cut Cable

Two fingers extended moving lower arm forward and backward at head height	Hoist Power Switch in Opposite Position

Attachment 7

SEARCH BRIEFING

A7.1. Objective.

A7.1.1. Number of Survivors/Description/Medical Condition

A7.1.2. Specialized Aircraft Equipment Required

A7.2. Search Area.

A7.3. On-Scene SAR Forces/On-Scene Commander (OSC).

A7.3.1. Establish contact with OSC; if none, accomplish OSC duties

A7.4. Communications (SAR forces and Controlling Agencies).

A7.5. Weather (En Route/On-Scene/Recovery).

A7.6. Search Pattern, Track Spacing, Altitude/Airspeed.

A7.7. Power Available/Power Required (SEAS).

A7.8. Bingo Fuel/Refueling Options.

A7.9. Actions Upon Sighting Objective.

A7.10. Recovery Location/Medical Facilities.

Attachment 8

ORDNANCE DELIVERY BRIEFING

A8.1. Range/Mission Number/Range Time.

A8.2. Range Clearing Procedures.

A8.3. Range Restrictions and Laser Procedures.

A8.4. Arming Procedures.

A8.5. Patterns.

A8.5.1. Altitude/Airspeed

A8.5.2. Fields Of Fire

A8.6. Communications.

A8.6.1. Air-To-Air/Air-To-Ground

A8.6.2. Interplane

A8.7. Weapons Malfunctions.

A8.7.1. Hot Gun Procedures/Routing

A8.7.2. De-Arming Location

A8.8. Flare Operations.

A8.9. Smoke Deployment.

A8.10. Range Exiting Procedures.

A8.11. Safety Considerations.

Attachment 9

HOT REFUELING BRIEFING

A9.1. Location.

A9.2. Time On Target.

A9.3. Communications.

A9.3.1. Callsign

A9.3.2. Air-to-Ground Frequencies

A9.4. Marshalling Procedures.

A9.5. Onload.

A9.6. Equipment.

A9.7. Emergency Procedures.

A9.8. Departure Instructions.

Attachment 10

EXTERNAL LOAD OPERATIONS BRIEFING

A10.1. Load Description.

A10.1.1. Anticipated Weight

A10.1.2. Sling Length/Hover Height

A10.2. Power Available/Power Required.

A10.3. Cargo Hook Arming/De-Arming.

A10.4. Hand Signals.

A10.5. Hookup.

A10.5.1. Grounding

A10.5.2. Eye protection

A10.5.3. External lighting

A10.6. En Route Airspeed and Altitude.

A10.7. Destination.

A10.8. Release.

A10.9. Emergency Actions.

A10.10. Safety Considerations.

Attachment 11

INSTRUMENT DEPARTURE BRIEFING

A11.1. To be accomplished in aircraft; if briefed elsewhere, re-brief any changes in aircraft prior to departure.

A11.2. ATIS/Airport Information.

A11.2.1. Cold Weather Corrections (As Required)

A11.3. FMS/Navigation/Communication Radio Settings.

A11.4. Flight Director/Automation Settings.

A11.5. Departure Clearance/Restrictions.

A11.6. Hazardous Terrain/Obstacles.

A11.7. Emergency Intentions.

A11.8. Emergency Return Approach.

A11.8.1. Type of approach

A11.8.2. DH/DA/MDA

A11.8.3. Inbound course

A11.8.4. Emergency Safe/Sector Altitude

Attachment 12

INSTRUMENT APPRROACH BRIEFING

A12.1. ATIS/Airport Information.

A12.1.1. Cold Weather Corrections (As Required)

A12.2. Type of Approach.

A12.3. Weather Required for the Approach.

A12.4. FMS/Navigation/Communication Radio Settings.

A12.5. Flight Director/Automation Settings.

A12.6. Heading and Attitude Systems.

A12.7. Altimeter (Barometric/Radio).

A12.8. Initial Approach Fix.

A12.8.1. Procedure Turn/Holding Entry

A12.9. Final Approach Fix/Final Approach Course.

A12.9.1. FAF Arrival Procedures

A12.10. DH/DA/MDA/Descent Plan.

A12.10.1. CFDA, DDA

A12.11. Missed Approach Point, Intentions, Climb Out Instructions.

A12.12. Minimum Safe Altitudes (Minimum Sector/Emergency Safe).

A12.13. Airfield Review (Alignment, Lights, Obstacles, Elevation).

A12.14. Crew Duties.

A12.15. Lost Communications Intentions.

A12.16. Backup Approach.

A12.17. Before Landing Checklist NOTE: When accomplishing successive approaches, only the items that have changed are required to be briefed.

Attachment 13

FENCE IN/OUT CHECKLIST

A13.1. F – Firepower/Fuel: Check Weapons/Fuel Computations

A13.2. E – Emitters: (Radio Altimeter, TACAN, IFF, Lighting) as Required

A13.3. N – Navigation Equipment: (FMS and EPWPS) as Required

A13.4. C – Communications: Set, as Required

A13.5. E – Electronic Countermeasures/Self-Protection: Set CMDS as Required **NOTE:** See AFTTPs for expanded information. The FENCE check is normally initiated and performed by the PM.

Attachment 14

ALTERNATE INSERTION/EXTRACTION PREFLIGHT GUIDE

A14.1. General. The following information was extracted from T.O. 00-25-245, *Testing and Inspection for Personnel Safety and Rescue Equipment*. Refer to T.O. 00-25-245 for expanded information and post flight requirements. T.O. 00-25-245 inspection procedures take precedence over this guide. Inspections and discrepancies will be documented on each equipment piece's AFTO Form 244, *Industrial Support Equipment Record*. **(T-2)** Discrepancies will be reported to the unit AIE Monitor. **(T-3) Warning:** Reject any device for live use if it fails any part of the preflight inspection.

A14.2. Forest Penetrator.

A14.2.1. Inspection/weight-check label – Check for current date.

A14.2.2. Condition – Check the following items:

A14.2.2.1. Damaged parts (broken, bent, deformed, or cracked). Bent seats, broken springs, bent bolts, etc., can be replaced with new parts. If main body of assembly is damaged, condemn complete assembly without replacement of parts.

A14.2.2.2. Missing parts, bolts, nuts, cotter pins, springs, and straps.

A14.2.2.3. Flotation Collar. Secure as required.

A14.2.2.4. Seats and hooks for freedom of movement to all positions, and proper latching and unlatching.

A14.2.2.5. Corrosion.

A14.2.2.6. Document any discrepancies in AFTO Form 244.

A14.3. Rescue Strop.

A14.3.1. Weight-check date current.

A14.3.2. Inspect fabric for cuts, deterioration, and abrasions.

A14.3.3. Inspect seams for proper adhesion and stitching.

A14.3.4. Inspect retainer straps for security of attachment and wear.

A14.3.5. Inspect all hardware for security of attachment, corrosion, damage, wear, and if applicable, ease of operation.

A14.4. Rescue Basket (Life Saving Systems 490-Series). Follow manufacturer recommendations for maintenance, inspection, and testing.

A14.5. Rescue Litter Assembly (Stokes Litter). A 5,000 pound (23 kilonewtons) locking carabineer will be used to attach the Stokes sling assembly to the hoist hook. **(T-2)**

A14.5.1. The following Stokes litters are approved for use:

A14.5.1.1. #404 MEDEVAC II Rigid

A14.5.1.2. #406, MEDEVAC IIA, Break-Apart

A14.5.1.3. #406TI MEDEVAC IIA, Break-Apart Titanium

Note: The "D" model number (e.g., #404-D) litters supplied by Life Saving Systems are 78 inches long and are compatible with the Isolated Personnel Stacking Litter (IPSL) system They are the preferred litter for operational and training use. Litters with a length of 84 inches are not compatible with the IPSL but may be used provided alternate methods are used for restraint in the cabin.

A14.5.2. Inspection/Weight Label - Checked for current date.

A14.5.3. Condition - Checked.

A14.5.3.1. Inspect stokes litter for general condition.

A14.5.3.2. Inspect all metal for cracks, indents, corrosion, and security of attachment.

A14.5.3.3. Inspect all welds for cracks and security of attachment.

A14.5.3.4. Inspect snow skids for general condition (if applicable).

A14.5.3.5. Inspect suspension bed webbing for cuts, tears, stains, fraying and security of attachment.

A14.5.3.6. Inspect quick release fittings for ease of operation, sharp edges and corrosion.

A14.5.3.7. Inspect all straps for cuts, tears, stains, fraying and security of attachment.

A14.5.3.8. Inspect lift rings for deformity or cracks.

A14.5.3.9. Inspect all stitching for fraying and security of attachment.

A14.5.3.10. Inspect all webbing for cuts, tears, fraying and grease contamination.

A14.5.3.11. Inspect carabiners for proper gate alignment, ease of operation, cracks and corrosion.

A14.5.3.12. Inspect carabiner gate pin hinge for deformity/security of attachment.

A14.5.3.13. Inspect for reflective tape on rescue litter and carabiners.

A14.5.3.13.1. Red reflective tape (2 places, 1-1/2 x 1/2-inch) at upper attachment points (as required).

A14.5.3.13.2. White reflective tape (2 places, 1-1/2 x 1/2-inch (NSN 01-078-8660) at lower attachment points (as required).

A14.5.3.14. Inspect entire flotation assembly for general condition, cleanliness, cuts, tears, fraying and for presence of oil, fuel, grease, or chemical contamination.

A14.5.3.15. Inspect lift cable sets for one crimp, identified by 1/2-inch-wide compression on swaging sleeves and defects such as kinks, broken wire strands, corrosion.

A14.6. Fast Rope.

A14.6.1. Check the woven loop on the mount end for excessive wear or chemical contamination.

A14.6.2. Check the rope along its entire length for fraying, cuts and chemical contamination. Inspect for any cut, chafe, or nicks that affect the integrity of the rope.

A14.6.3. Do not use a rope that is severely frayed (light fraying on the rope from normal use does not weaken the rope).

A14.6.4. Do not use a rope when any single strand is cut halfway through.

A14.6.5. Inspect the rope for contamination of acid, alkaline compounds, saltwater, fire extinguisher solutions or petroleum-based solvents. Changes in color caused by chemicals are usually blotchy and have an unusual odor. Although used ropes gradually change color, such changes do not indicate a decrease in strength unless the change is due to contact with strong chemicals. Changes occurring because of use are usually uniform throughout the length of the rope.

A14.6.6. Make necessary inspection entries in AFTO Form 244.

A14.7. Fast Rope Quick Release Device. Follow manufacturer recommendations for maintenance, inspection, and testing.

A14.7.1. Condition - Checked.

A14.7.2. Inspect all metal for cracks, indents, corrosion, and security of attachment.

A14.7.3. Inspect release button. Ensure button actuates release gate.

A14.7.4. Inspect release button safety pin and attachment security.

Attachment 15

EXAMPLE AUTHORIZATION TO REMOVE HUMAN REMAINS

Figure A15.1. Example Authorization to Remove Human Remains.

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

_____

(Signature)

_____

(Printed Name)

_____

(Date)

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