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GENERAL FLIGHT RULES

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This instruction implements AFD 11-2, *Aircrew Operations*, by prescribing general flight rules that govern the operation of USAF aircraft (manned and unmanned) flown by USAF pilots,

pilots of other services, foreign pilots, and civilian pilots. This instruction applies to Air Force activities operating aircraft on loan or lease, to the extent stipulated in the loan or lease agreement; Air Force Reserve Command (AFRC) units; and to Air National Guard (ANG) units. Public Aircraft Operations (PAO) under government contract for Air Force operations will comply with stipulations documented in written declaration of public aircraft status, applicable Title 14 Code of Federal Regulations (CFR) and this regulation. Waiver information, in accordance with AFI 33-360 tiering, may be found in **Chapter 1**. Non-tiered compliance items in this instruction that are targeted for units above the wing or equivalent and above DRUs/FOAs may be waived by the MAJCOM/CC (delegable no lower than the MAJCOM Director), with the concurrence of HQ USAF/A35 unless otherwise noted. This publication may be supplemented, but all supplements above wing or equivalent level must be routed to HQ AFFSA/XOF for coordination prior to certification and approval. Air Force Instruction (AFI) 11-2 Mission Design Series (MDS) Specific, Volume 3 instructions (e.g., AFI 11-2KC-10, Volume 3) may contain specific operational guidance unique to individual aircraft and crew positions. MDS-specific, Volume 3 instructions will not be less restrictive than this instruction. Address questions concerning this instruction to Headquarters Air Force Flight Standards Agency (HQ AFFSA) at HQ AFFSA/XOF, 6500 S. MacArthur Blvd, Bldg 4, Room 240, Oklahoma City, OK 73169, email: hgaffsa.xof@us.af.mil. See Attachment 1 for a list of terms and abbreviations. Use AF Form 847, *Recommendation for Change of Publication*, to recommend changes to this instruction in accordance with (IAW) AFI 11-215, *USAF Flight Manuals Program (FMP)*. The reports in this directive are exempt from licensing according to AFI 33-324, *The Air Force Information Collections and Reports Management Program*. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

(USAFESUP) AFI 11-202, Volume 3, dated 10 August 2016, is supplemented as follows: **This supplement is applicable to all assigned United States Air Forces in Europe and United States Air Forces Africa (USAFE-AFAFRICA) units and units under USAFE-AFAFRICA oversight.** This supplement *only* applies to the Air Force Reserve Command (AFRC) and Air National Guard (ANG) when operating under USAFE-AFAFRICA oversight. This publication may be supplemented at any level, but all direct Supplements must be routed to HQ USAFE-AFAFRICA/A3TV for coordination prior to certification and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW AFMAN 33-363 and disposed of IAW AFRIMS Records Disposition Schedule. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847; route AF Forms 847 IAW AFI 11-215 from the field through the appropriate functional chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items.

(LAKENHEATHSUP) This supplement sets procedures relating to the Functional Check Flight (FCF) and Operational Check Flight (OCF) program at Royal Air Force (RAF) Lakenheath and applies to all units assigned to the 48th Fighter Wing (48 FW). This publication may not be supplemented or further implemented/extended. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*, prescribed by AFI 11-215, *USAF Flight Manuals Program*; route AF Form 847s from the field through appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This document has been substantially revised and needs to be completely reviewed. Major changes include: (1) correcting administrative and grammatical errors, (2) changing tier compliance items per AFI 33-360, *Publications and Forms Management*, (3) adding departure decision flow chart to appendix, (4) outlining waiver processes for each tiered item, (5) incorporating flight duty period changes, (6) clarifying airfield lighting requirements, (7) updating RNAV 1801 requirements, (8) clarifying authorized weather sources, (9) correcting alternate weather requirements, (10) clarifying DVAs, (11) clarifying disaster area operations, (12) clarifying cold weather altitude corrections, (13) removed MAJCOM ability to waive alternate weather requirements IAW the CFR, (14) removed MAJCOM/A3 ability to authorize any airfield as an alternate regardless of weather conditions IAW the CFR, (15) adopts AF Form 679 and (16) other minor changes.

(USAFESUP) This document has been substantially revised and must be completely reviewed. Major changes include (1) Reorganized in chapter and content layout, (2) updated applicability to USAFE and AFAFRICA units and units under USAFE-AFAFRICA oversight, and (3) numerous other changes.

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Chapter 1

ROLES AND RESPONSIBILITIES

1.1. General.

1.1.1. **Pilot in Command Authority.** The Pilot in Command (PIC), regardless of rank, is responsible for, and is the final authority for the operation of the aircraft.

1.1.2. This AFI provides broad guidance and cannot address every situation. Aircrew will use best judgment to safely conduct flying operations.

1.1.3. Supplemental information to this AFI may be found in the AFMAN 11-217 series and applicable Major Command (MAJCOM) supplements.

1.1.4. This instruction is a common source of flight directives that includes:

1.1.4.1. Air Force guidance;

1.1.4.2. Title 14 Code of Federal Regulations (CFRs) and the Aeronautical Information Manual (AIM); and,

1.1.4.3. International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs).

1.1.5. Unmanned Aircraft System (UAS) or Remotely Piloted Aircraft (RPA) applicability.

1.1.5.1. Category 4 and 5 UAS operations shall follow this AFI; Category 1-3 (“Small”) UAS shall be governed by AFI 11-502V3, *Small Unmanned Aircraft Systems Operations*. UAS categories are listed in AFI 11-502V3.

1.2. Waivers. Directive guidance (will, shall, must, etc.) throughout this regulation are tiered IAW AFI 33-360, *Publications and Forms Management*. For examples of waivers and waiver authorities, see AFI 33-360. HAF/A3 designates HAF/A35 as waiver authority on all Tier-0 and Tier-1 waivers.

1.2. (USAFESUP) Waivers. USAFE-AFAFRICA/CC delegates the waiver authority for all Tier 1 (T-1) and Tier 2 (T-2) compliance items within this instruction to the USAFE-AFAFRICA/A3. Unless otherwise stated, USAFE-AFAFRICA/A3 is the waiver authority for compliance items in this supplement.

1.2. (LAKENHEATH) The 48th Fighter Wing Commander (48 FW/CC) delegates all Tier 3 (T-3) waivers authorities in this instruction only to the 48th Operations Group Commander (48 OG/CC).

1.2.1. **Waiver Process.** MAJCOMs (or subordinate units for T-2 and T-3 waivers) initiate and staff all waiver packages. Coordination through HQ AFFSA/XOF (hqaffsa.xof@us.af.mil) is required for Tier 0 and 1 waivers and is recommended for Tier 2 and 3 waivers. Once waiver is approved, MAJCOM Stan/Eval will send an informational copy to HQ AFFSA/XOF within 5 duty days. Verbal concurrence is not authorized for T-0 waivers. Verbal waivers for all other tiers is not recommended except in support of time-critical missions or circumstances; written documentation following verbal concurrence IAW AFI 33-360 will occur within 24 hours (T-1).

1.2.1. **(USAFESUP) Waiver Process.** Units will initiate all Tier 0, 1, and 2 waiver requests IAW paragraph 1.2.5. .

1.2.1.1. **Tier 0:** Annotated by “(T-0)”. Determined by respective non-AF authority (e.g. Congress, White House, Secretary of Defense, Joint Staff, etc.). The waiver authority is external to AF.

1.2.1.1.1. Coordination is required through HQ AFFSA/XOF for Tier 0 waivers. In most cases, HQ AFFSA/XOF will pursue external agency concurrence and provide results to MAJCOM (e.g. an Exemption to the CFRs granted by the Federal Aviation Administration (FAA) Administrator). MAJCOM/CC (delegable no lower than MAJCOM Director) issues waiver after MAJCOM obtains necessary non-AF authority permission and HAF/A35 concurrence.

1.2.1.1.1.1. When Host Nation (HN) concurrence is required, OCONUS MAJCOMs will coordinate Tier 0 waiver requests with the respective HN.

1.2.1.1.2. Tier 0 guidance may include FAA guidance from the CFRs or ICAO guidance from the SARPs.

1.2.1.2. **Tier 1:** Annotated by “(T-1)”. Non-compliance puts Airmen, commanders or the USAF strongly at risk of mission or program failure, death, injury, legal jeopardy or unacceptable fraud, waste or abuse.

1.2.1.2.1. MAJCOM Stan/Eval shall coordinate with HQ AFFSA/XOF when initiating Tier 1 waivers. MAJCOM/CC (delegable no lower than MAJCOM Director) issues waiver after MAJCOM obtains HAF/A3 concurrence (delegated to HAF/A35).

1.2.1.2.2. Tier 1 includes guidance that lends to standardization across all USAF wings and platforms.

1.2.1.3. **Tier 2:** Annotated by “(T-2)”. Non-compliance may degrade mission or program effectiveness or efficiency and has potential to create moderate risk of mission or program failure, injury, legal jeopardy or unacceptable fraud, waste, or abuse.

1.2.1.3.1. MAJCOM Stan/Eval will request MAJCOM/CC (delegable no lower than MAJCOM/A3) approval for all Tier 2 waivers. Tier 2 waivers only apply within the approving MAJCOM.

1.2.1.3.2. Tier 2 guidance includes instruction that lends to standardization across MAJCOM-specific wings and platforms.

1.2.1.4. **Tier 3 :** Annotated by “(T-3)”. Non-compliance may limit mission or program effectiveness or efficiency and has a relatively remote potential to create risk of mission or program failure, injury, legal jeopardy or unacceptable fraud, waste, or abuse.

1.2.1.4.1. Wing commanders, delegable no lower than operations group commanders or equivalent, will initiate and approve Tier 3 waiver requests. Once approved, wings will send an informational copy to MAJCOM Stan/Eval and HQ AFFSA/XOF within 5 duty days.

1.2.1.4.1.1. **(Added-USAFESUP)** Units will report all “T-3” WG/CC and below waivers issued against the parent publication and this supplement via the Stan/Eval Board (SEB) minutes IAW AFI 11-202V2, *Aircrew Standardization/Evaluation Program*, and associated supplements.

1.2.1.4.2. Tier 3 guidance includes instruction that is limited to wing and installation specified rules that do not affect AF-level standardization.

1.2.2. For the purposes of this instruction, flying MAJCOMS are: ACC, AETC, AFDW, AFGSC, AFMC, AFRC, AFSOC, AMC, DIA, NGB, PACAF, and USAFE. Commanders Air Force forces (COMAFFORs) in the grade of O-8 or higher in Combatant Commands (CCMDs) are considered MAJCOM commanders only for forces under their operational control.

1.2.3. MAJCOMs must obtain a waiver to AFI 33-360 if delegation to other “waiver authorities” than those listed in Table 1.1 of AFI 33-360 is desired.

1.2.4. Waivers should be submitted using AF Form 679, *Air Force Publication Compliance Item Waiver Request/Approval* or as directed in AFI 33-360.

1.2.5. **(Added-USAFESUP)** Units will reference the HQ USAFE-AFAFRICA/A3TV Waiver/Memorandum database located on the HQ USAFE-AFAFRICA/A3TV Information Collaborative Environment (ICE) page (https://ice.usafe.af.mil/sites/A3/A3T/A3TV_External/default.aspx) for all current HQ USAFE-AFAFRICA issued waivers and memorandums.

1.2.5.1. **(Added-USAFESUP)** USAFE-AFAFRICA users may request access directly from the ICE page upon their first access attempt. Non USAFE-AFAFRICA users may request access by sending an email to the USAFE/A3TV (Workflow) organizational email account (usafea3tv.a3tv@us.af.mil) with name, rank, organization, and reason for access.

1.2.5.2. **(Added-USAFESUP)** When requesting a waiver or approval memorandum, units will use the HQ USAFE-AFAFRICA Waiver Template (AF Form 679) and Memorandum Templates located on the ICE page. **DO NOT** just recycle previous waivers or memorandums.

1.2.5.3. **(Added-USAFESUP)** Written Requests

1.2.5.3.1. **(Added-USAFESUP)** Process requests through local Stan/Eval channels, then send to the USAFE/A3TV (Workflow) organizational email account (usafea3tv.a3tv@us.af.mil).

1.2.5.3.2. **(Added-USAFESUP)** As much as practical, staff requests to arrive at HQ USAFE-AFAFRICA/A3TV at least 10 business days prior to when the waiver or approval memorandum is needed.

1.2.5.4. **(Added-USAFESUP)** Verbal Requests

1.2.5.4.1. **(Added-USAFESUP)** When authorized, verbal approvals should be limited to satisfy short notice operational mission requirements. The requesting unit will:

1.2.5.4.1.1. **(Added-USAFESUP)** Secure unit chain-of-command concurrence before contacting HQ USAFE-AFAFRICA. The minimum level of leadership required for concurrence is at unit discretion, but should be commensurate with the level of risk being assumed when executing under the waiver or approval memorandum.

1.2.5.4.1.2. **(Added-USAFESUP)** Prior to mission execution, contact HQ USAFE-AFAFRICA/A3TV, DSN: 314-480-9361/9363. During mission execution, contact the Command and Control (C2) with mission execution authority. The mission execution authority will coordinate with the on-call A3TV POC. Requesting individuals shall be prepared to verbally brief the approval authority if necessary.

1.2.5.4.1.3. **(Added-USAFESUP)** Initiate written request documentation within 24 hours of verbal approval IAW paragraph **1.2.5.3.** . HQ USAFE-AFAFRICA/A3TV will process accordingly and forward a completed copy back to the unit.

1.3. Compliance. The PIC will ensure compliance with this AFI and the following (see Attachment 1 for related publications):

1.3.1. Air Force, MAJCOM, and Mission Design Series (MDS)-specific instructions;

1.3.2. Flight Information Publications (FLIP) and Foreign Clearance Guide (FCG);

1.3.3. Air Traffic Control (ATC) clearances;

1.3.3. **(USAFESUP)** Air Traffic Control Clearances. When practical, aircrew will use Host Nation (HN) English terminology when speaking to HN controllers. If interpretation is in question, aircrew will use plain language to convey their requests/intentions.

1.3.4. Notices to Airmen (NOTAMs), aircraft technical orders; and,

1.3.5. Combatant Commander's instructions and other associated directives IAW the Air Component Commander's objectives.

1.4. Operational Prerogative of Military Aircraft. When operationally necessary, PICs are authorized to conduct military flight operations with due regard for the safety of navigation of civil traffic in international airspace IAW FLIP *General Planning* (GP). Except for pre-planned missions, PICs shall consider such operations in peacetime as a flight rule deviation and will comply with the reporting requirements in **paragraph 1.6.** (T-0). MAJCOMs may authorize tactical operations for training and compliance with paragraph 1.3.

1.4. (USAFESUP) Operational Prerogative of Military Aircraft. USAFE-AFAFRICA/A3 authorizes tactical operations for training and to comply with paragraph **1.3.** during Due Regard IAW AFI 11-2MDSV3, local guidance, and/or MDS-specific AFTTPs.

1.5. MAJCOM Supplements. MAJCOM supplements shall not be less restrictive than this instruction and be IAW AFI 33-360. Submit supplements to HQ AFFSA/XOF (hqaffsa.xof@us.af.mil) for coordination prior to publishing.

1.5.1. Tier 0 and 1 waivers shall not be published in MAJCOM supplemental guidance.

1.5.2. **(Added-USAFESUP)** Unit supplements, to include supplements to AFI 11-2MDS series publications, must be coordinated with HQ USAFE-AFAFRICA/A3TV prior to publication. Forward all requests for coordination to the USAFE/A3TV (Workflow) organizational email account (usafea3tv.a3tv@us.af.mil).

1.6. Deviations. An ATC clearance is not authority to deviate from this instruction. A PIC may only deviate from this instruction, flight rule, or ATC clearance to protect life, for safety of flight, or when an in-flight emergency requires immediate action.

1.6.1. **Notification.** When deviating from an ATC clearance, notify ATC of the action taken as soon as possible.

1.6.2. **Post-Flight Actions.** In the event of a deviation from a flight rule and/or when given traffic priority by ATC in an emergency, the PIC will verbally report the incident to a supervisor and commander within 24 hours of the incident and shall make a detailed written record (T-0). The unit will keep a copy of the record for a minimum of 1 year from the date of the incident and be prepared to provide the record to the appropriate investigating authority if required (T-0).

1.7. Violations. A violation may result when a USAF aircraft deviates from flight rules. FAA ATC deviation reports involving a USAF aircraft are processed by the Air Force Representative to the FAA (AFREP) IAW AFI 13-201, *Airspace Management*. Air Force ATC deviation reports involving USAF aircraft are processed IAW AFI 91-202, *The US Air Force Mishap Prevention Program*. Violations that occur in the airspace of foreign nations are processed IAW the procedures of that nation.

1.7.1. For any alleged violation, utilize aircraft call-sign for any contact with ATC. Do not release names or personal information of crewmembers to non-USAF agencies without the permission of the AFREP in coordination with the MAJCOM/A3 or HQ USAF/A35.

1.7.1.1. **(Added-USAFESUP)** When there is no AFREP, names of aircrew will not be released to foreign agencies without the permission of the WG/CC in coordination with the individual's flying chain of command and the USAFE-AFAFRICA/A3.

1.7.2. If notified by an AFREP of a possible violation, MAJCOMs will preserve any available evidence for a minimum of 180 days and will contact the AFREP prior to disposal.

1.7.2.1. **(Added-USAFESUP)** If notified of a possible violation, WGs will preserve any available evidence for a minimum of 180 days and will contact HQ USAFE-AFAFRICA/A3TV prior to disposal.

1.8. Aviation Safety Reporting. Potential hazards to aviation safety should be reported via the military Aviation Safety Action Program (ASAP) (www.safety-masap.com). Incidents involving damage to aircraft, personal injury, or intentional disregard of orders or instructions, whether reported to ASAP or not, shall be reported to a Flight Safety Officer (FSO) as soon as possible (T-0). Report hazardous air traffic events IAW AFMAN 91-223, *Aviation Safety Investigations and Reports*.

1.9. Airworthiness. For all issues concerning aircraft airworthiness certification, refer to AFI 62-601, *USAF Airworthiness*.

1.10. Communication, Navigation, Surveillance (CNS) Certification and Approval. USAF aircraft and aircrews must comply with the performance requirements and specifications appropriate for the route, procedure, and airspace unless exemptions or special procedures for non-equipped aircraft are granted (T-0).

1.10.1. **Unmanned Aircraft Systems** . See paragraph 4.10.

1.10.2. **Operational Approvals** . MAJCOM CNS procedures and training should provide a level of performance and safety that is consistent with civil airspace standards. HQ AFFSA will assist MAJCOMs with Operational Approvals. Contact AFFSA/XON (hqaffsa.xon@us.af.mil) for capabilities that require specific operational approval.

1.10.2. **(USAFESUP) Operational Approvals.** CNS/ATM operations, training, and documentation as directed in paragraph **1.10.2.** shall be IAW AFI 11-2MDS series publications and MDS-specific AFTTPs.

1.10.2.1. Lead MAJCOM responsibilities:

1.10.2.1.1. Provide training, instructions, procedures, and minimum equipment lists for CNS capabilities to operators and maintenance personnel.

1.10.2.1.2. Receive HQ USAF/A35 endorsement for operational approvals. Initiate endorsement through AFFSA/XON. MAJCOMs may utilize endorsement from other MAJCOMs for similar platforms.

1.10.2.1.2.1. If training, instructions, procedures, or minimum equipment lists differ from the lead MAJCOM, separate endorsement for operational approval from HQ USAF/A35 is required.

1.10.2.1.3. Provide detailed MDS-specific guidance authorizing aircrew to exercise CNS capabilities including approvals, qualifications, and any restrictions or prohibitions.

1.10.2.1.4. Ensure CNS capabilities are properly certified and operationally approved IAW AFI 63-137, *Assurance of Communications, Surveillance/Air Traffic Management (CNS/ATM), Navigation Safety, and Next Generation Air Transportation System (NextGen) Performance*. Also reference AFI 63-112, *Cockpit Working Groups*.

1.10.2.2. AFFSA responsibilities:

1.10.2.2.1. Assist MAJCOMs with identifying and defining CNS requirements and accomplishing operational approvals.

1.10.2.2.2. Review MAJCOM approvals for consistency with civil standards and for completeness of operational procedures, flight manuals, and directives prior to staffing for endorsement.

1.11. Primary Flight Reference (PFR). Any PFR used for instrument flight shall be considered for endorsement by HQ USAF/A35. Contact HQ AFFSA/XON (hqaffsa.xon@us.af.mil) for PFR endorsement process.

1.11.1. USAF aircraft cockpits and UAS control stations must always be capable of providing full-time attitude, altitude, airspeed information, and the capability to recognize, confirm, and recover from unusual attitudes in all pilot positions (T-1).

1.11.1.1. UAS control stations must also display at all times: link status, link availability, lost link indications, and logic information (autopilot control mode, primary route, and contingency route) (T-1). *Exception:* Contingency route may be immediately available if not displayed at all times.

1.11.1.2. Lead Commands will define display requirements for aircraft not certified or authorized for instrument flight (T-1).

1.11.2. MAJCOMs will issue guidance for configuration of pilot-selectable flight displays. In actual instrument meteorological conditions (IMC) or when there is no discernible visual horizon, an HQ USAF/A35-endorsed PFR shall be displayed in the pilot flying position.

1.11.2.1. **(Added-USAFESUP)** Pilot-selectable flight displays will be configured IAW AFI 11-2MDSV3, TO guidance, and MDS-specific AFTTPs. See paragraph **3.7**.

Chapter 2

FLIGHT READINESS

2.1. Crew Rest. Crew rest is compulsory for aircrew members prior to performing any duties involving aircraft operations and is a minimum of 12 non-duty hours before the Flight Duty Period (FDP) begins (T-2). Crew rest is free time and includes time for meals, transportation, and rest. This time must include an opportunity for at least 8 hours of uninterrupted sleep. Crew rest period cannot begin until after the completion of official duties.

2.1.1. Aircrew members are individually responsible to ensure they obtain sufficient rest during a crew rest period.

2.1.2. Once crew rest begins, any official business interrupts the crew rest period. If crew rest is interrupted, individuals will immediately inform appropriate leadership or command and control (C2) and will either begin a new crew rest period or not perform flight duties (T-2). **Exception:** PIC (or designee) may initiate mission-related communication with official agencies without interrupting crew rest.

2.1.3. **Exceptions to the 12-Hour Minimum Crew Rest Periods** . For continuous operations when basic aircrew FDPs are between 12 to 14 hours, subsequent crew rest may be reduced to a minimum of 10 hours by the PIC in order to maintain a 24-hour work/rest schedule (T-2). “Continuous operations” is defined as three or more consecutive FDPs of at least 12 hours duration with minimum crew rest period.

2.1.3.1. The 10-hour crew rest exception shall only be used to keep crews in 24-hour clock cycles, not for scheduling convenience or additional sortie generation (T-2).

2.1.3.2. Any reduction from 12-hour crew rest requires pre-coordination for transportation, meals, and quarters so that crewmembers are provided an opportunity for at least 8 hours of uninterrupted sleep (T-2).

2.2. Flight Duty Period (FDP) (see Table 2.1). FDP may be waived by MAJCOM/A3 when an ORM assessment determines that mission requirements justify the increased risk. At MAJCOM/A3 discretion, waiver authority may be further delegated to no lower than the operations group commander (or equivalent).

2.2. (USAFESUP) Flight Duty Period (FDP). USAFE-AFAFRICA/A3 delegates FDP waiver authority to the OG/CC, AOC/CC, or comparable level of flying supervision during mission execution. Unless specified in the AFI 11-2MDSV3, the maximum cumulative (i.e., 2 hour PIC extension plus OG/CC approved waiver) FDP extension(s) authorized under this delegation is limited to 1.25 times the maximum FDP hours IAW Table 2.1. (e.g., the maximum FDP waiver an AOC/CC can issue during mission execution for a KC-135 aircraft with a “Basic Aircrew” is 20 hours).

2.2.1. FDP begins when an aircrew member reports for a mission, briefing, or other official duty and ends at final engine shutdown after the final flight of the completed mission. FDP for UAS aircrew member ends at final engine shutdown, final in-flight handover briefing, or final crew swap, whichever occurs last.

2.2.2. When authorized by the waiver authority, the PIC may extend FDP a maximum of 2 hours to compensate for mission delays.

2.2.2. **(USAFESUP)** USAFE-AFAFRICA/A3 authorizes PICs to extend the maximum flight duty period up to 2 hours during mission execution provided the mission priority justifies the risk. PICs should make every effort to contact their OG/CC, AOC/CC, or comparable level of flying supervision prior to exercising this option. In cases where prior notice is not practical, PICs will report flight duty period extensions through their chain of command to the OG/CC, AOC/CC, or comparable level of flying supervision upon landing. The intent of this exception is to allow PICs flexibility to adapt to unforeseen circumstances encountered during mission execution. Missions will not be planned to utilize this exception.

2.2.3. **(Added-USAFESUP) Single-pilot aircraft.** Maximum FDP during night operations (not to include civil twilight) is 10 hours. **Exception:** Alert crews operating IAW paragraph 2.5. **(USAFE)** and aircrew on an ACC/AOS movement to/from the CONUS. In these cases the maximum FDP is IAW **Table 2.1**.

2.2.4. **(Added-USAFESUP) Inadequate Security (MAF Only).** If the PIC determines an airfield's security inadequate and the safety of the aircraft and aircrews are in question, USAFE-AFAFRICA/A3 authorizes the PIC to extend the crews maximum FDP per **Table 2.1** enough to relocate the aircraft to the nearest secure airfield.

2.3. Post-Flight Duties. If official post-flight duties are anticipated to exceed 2 hours, commanders should consider reducing the FDP to ensure the safe completion of those duties.

Table 2.1. Maximum FDP (Hours).

Aircraft Type	Basic Aircrew	Augmented Aircrew
Single Piloted Aircraft	12	NA
Fighter, Attack or Trainer (Dual Control)	12	16
Bomber, Reconnaissance, Electronic Warfare, or Battle Management (Dual Control)	16	24
Tanker/Transport	16	NA
Tanker/Transport with Sleeping Provisions ¹	16	24
Rotary Wing (without Auto Flight Control System)	12	14
Rotary Wing (with Auto Flight Control System)	14	18
Utility	12	18
Unmanned Aircraft System (Single Control)	12	NA
Unmanned Aircraft System (Dual Control)	16	NA
Tilt-rotor	16	NA
<i>NOTE 1: Sleeping provisions are crew bunks or other MAJCOM-defined rest facilities aboard the aircraft. Rest facilities should provide adequate privacy and noise levels to obtain suitable rest.</i>		

2.4. Deadhead Time. Deadhead time is an official duty performed by an aircrew member flying as a passenger (no flight-related duties performed) while on flight orders and may be flown without crew rest.

2.4.1. If flight-related duties are planned to be performed following deadheading, crew rest and FDP restrictions apply (T-2).

2.4.2. If in-flight or crew-specialty related duties (e.g., aircraft off-loading or performance data calculations) are performed in conjunction with deadheading, crew rest and FDP restrictions apply (T-2).

2.4.3. Deadhead crewmembers will be annotated as Mission Essential Personnel (MEP) on the Flight Authorization IAW AFI 11-401, Aviation Management (T-1).

2.5. Alert Duty. MAJCOMs establish alert and compensatory periods in keeping with mission requirements and risk management (RM).

2.5. (USAFESUP) Alert Duty. Reference AFI 11-2MDSV3 or [Attachment 7](#) for CAF alert guidance.

2.6. Maximum Flying Time . Maximum flying time is 56 flight hours per 7 consecutive days, 125 flight hours per 30 consecutive days, and 330 flight hours per 90 consecutive days.

2.6.1. Maximum flying time may be waived by MAJCOM/A3 when an ORM assessment determines that mission requirements justify the increased risk. At MAJCOM/A3 discretion, waiver authority may be further delegated to no lower than the operations group commander (or equivalent).

2.6.1.1. **(Added-USAFESUP) UAS Only.** Unless specifically defined in an ORDER (e.g., Operations Order), the USAFE-AFAFRICA/A3 is the waiver authority for maximum flying times defined in paragraph [2.6.](#) *only* for the Launch and Recovery Element when physically located in either EUCOM or AFRICOM. Request waivers IAW paragraph [1.2.5.](#) . Waiver authority for the Mission Control Element resides with the owning MAJCOM/A3.

2.7. Flight Readiness Limitations .

2.7.1. Aircrew members will not fly:

2.7.1.1. Anytime the crewmember has not obtained the appropriate crew rest IAW [paragraph 2.1.](#) (T-2).

2.7.1.2. If any alcohol is consumed within 12 hours prior to takeoff (or assuming aircraft control for UAS) or if impaired by alcohol or any other intoxicating substance, to include the effects or after-effects (T-0).

2.7.1.3. Anytime a physical or psychological condition is suspected or known to be detrimental to the safe performance of flight duty. Consult a flight surgeon at the earliest opportunity.

2.7.1.4. While self-medicating, except IAW the “Official Air Force Aerospace Medicine Approved Medications” found in AFI 48-123, *Medical Examinations & Standards* (T-1).

2.7.1.5. Within 24 hours of compressed gas diving including SCUBA, surface supplied diving, hyperbaric (compression) chamber exposure, or aircraft pressurization checks exceeding 10 minutes in duration below sea level; these restrictions not applicable to UAS flight operations (T-1). **Exceptions:** Following Helicopter Emergency Egress Device System (HEEDS) training, aircrew may only fly within the 24-hour window if the aircraft’s maximum altitude remains below 10,000 ft. MSL. Air Force divers on aeronautical orders will follow guidelines IAW SS521-AG-PRO-010 U.S. Navy Diving Manual for flying and diving restrictions (T-1).

2.7.1.6. Within 12 hours after completion of a hypobaric (altitude) chamber flight above 25,000 ft. mean sea level (MSL) (T-1). Personnel may fly as passengers in aircraft during this period provided the planned mission will maintain a cabin altitude of 10,000 ft. MSL or less. For altitude chamber flights to a maximum altitude of 25,000 ft. MSL or below, aircrew members may fly without restriction as crewmembers or passengers if cabin altitude is not planned to exceed 15,000 ft. MSL (this restriction not applicable to UAS flight operations). There are no restrictions following Reduced Oxygen Breathing Device (ROBD) training.

2.7.1.7. Within 72 hours after donating blood, plasma, or bone marrow (T-1).

2.7.2. **Medical.** Aircrew members must maintain a medical clearance from the flight surgeon to perform in-flight duties (T-1). Medical or dental treatment obtained from any source must be cleared by a flight surgeon prior to reporting for flight duty (T-1).

2.7.2.1. Use of any medication or dietary supplements is governed by AFI 48-123 and as approved by a flight surgeon. Aircrew members will not normally self-medicate (T-1). In the absence of other MAJCOM guidance, the following is a partial list of medications that may be used without medical consultation:

2.7.2.1.1. Single doses of over-the-counter (OTC) aspirin, acetaminophen, ibuprofen to provide analgesia for minor self-limiting conditions.

2.7.2.1.2. OTC skin antiseptics, topical anti-fungals, 1% hydrocortisone cream, or benzoyl peroxide for minor wounds and skin diseases which do not hinder flying duties or wear of personal protective equipment.

2.7.2.1.3. OTC antacids for mild isolated episodes of indigestion.

2.7.2.1.4. OTC hemorrhoidal suppositories.

2.7.2.1.5. OTC bismuth subsalicylate for mild cases of diarrhea.

2.7.2.1.6. OTC oxymetazoline or phenylephrine nasal sprays may be carried should unexpected ear or sinus block occur during flight. Aircrew may only use such sprays as “get me downs.” Do not use to treat head symptoms prior to flight.

2.8. Alertness Management and Fatigue Mitigation. MAJCOMs will provide guidance to address aircrew alertness and fatigue management.

2.8.1. **Fatigue Countermeasure Medications.** MAJCOMs will provide guidance on the use of go and no-go medications IAW AF/SG policy.

2.8.1. **(USAFESUP) Fatigue Countermeasure Medications .** Aircrew will use go/no-go medication IAW AF/SG policy, AFI 11-2MDSV3 and local guidance.

2.8.2. **Controlled Cockpit Rest.** Controlled cockpit rest may be implemented when the basic aircrew includes a second qualified pilot. All cockpit crewmembers must remain at their stations (T-0). Cockpit rest will be taken by only one crewmember (per crew position, as applicable) at a time, must be restricted to non-critical phases of flight during cruise, terminate one hour prior to planned descent, and should be limited to 45 minutes per rest period (T-2). More than one rest period per crewmember is permitted. Cockpit rest is not authorized when aircraft system malfunctions increase cockpit workload (e.g., autopilot, navigation systems) (T-1). The resting crewmember must be awakened immediately if a

situation develops that affects flight safety (T-1). Cockpit rest shall not be a substitute for any required crew rest (T-1).

2.8.3. Flight publications describe procedures for loss of pressurization, oxygen, cockpit temperature control, inoperative autopilot, and other in-flight malfunctions or emergencies that restrict flight duration and contribute to aircrew fatigue. Such limitations within flight publications take precedence over less restrictive standards in this instruction.

2.8.4. **(Added-USAFESUP) Alertness Management.** Alertness management and spatial disorientation mitigation strategies will be IAW AFI 11-2MDS guidance, AFMAN 11-217V1, and MDS-specific AFTTPs.

2.8.5. **(Added-USAFESUP) Fatigue Management.**

2.8.5.1. **(Added-USAFESUP)** Aircrew members will be afforded a minimum of 24 hours crew rest when the member has performed three consecutive FDPs (per **Table 2.1.**) of 12 hours or more and received minimum crew rest periods (IAW paragraphs **2.1.** thru **2.1.3.2.**) between FDPs. **Exception:** Alert crews operating IAW paragraph **2.5.** (USAFE).

2.8.5.2. **(Added-USAFESUP)** Aircrew crossing four or more time zones within a 24-hour period while returning to their home station (e.g., returning from the CONUS to the USAFE-AFAFRICA AOR) will not fly for 48 hours after first arriving back in the USAFE-AFAFRICA AOR (T-3). **Exception:** Aircrew who have a 36 hour layover or less (beginning when they land at their destination) after leaving the EUCOM and/or AFRICOM AORs prior to returning to home station.

2.8.5.3. **(Added-USAFESUP)** Aircrew members will not fly their first duty day back from a non-flying absence (e.g., TDY, leave) lasting two weeks or more (T-3). Individuals must be given time to refresh on aircraft procedures, unit standards, and be afforded the opportunity to participate in the mission planning for their first flight back.

2.9. Aircrew Flight and Survival Equipment. Wear and use authorized clothing and equipment IAW AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*; AFI 16-1301, *Survival, Evasion, Resistance and Escape (SERE) Program*; MAJCOM or wing guidance; Special Instructions (SPINS); the aircraft technical order (T.O.); and AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel* (T-1).

2.9.1. **Spectacles.** Crewmembers who require corrective spectacles while performing aircrew duties must only use Air Force-provided spectacles as outlined in AFI 48-123, *Medical Examinations and Standards* (T-1). Crewmembers must also carry a spare set of clear Air Force-provided spectacles while performing aircrew duties (T-1).

2.9.2. **Sunglasses.** Consult AFI 48-123, *Medical Examinations and Standards*, to determine the types of sunglasses approved for flight (T-1).

2.9.3. **Contact Lenses.** Crewmembers who desire contact lenses must consult a flight surgeon, meet criteria, and follow guidelines outlined in AFI 48-123, *Medical Examinations and Standards* (T-1). While performing aircrew duty, comply with paragraph 2.9.1.

2.9.4. **Laser Eye Protection.** MAJCOMs that permit aircrew laser eye protection will publish specific guidance on training and use prior to in-flight use. Aircrew will follow AFI 11-301, Volume 4, *Aircrew Laser Eye Protection (ALEP)*, when potential laser hazards exists.

2.9.4. **(USAFESUP) Laser Eye Protection.** USAFE-AFAFRICA/A3 approves the use of laser eye protection. Prior to the use of ALEP, aircrews will complete training IAW AFI 11-202V1, AFI 11-2MDS series publications, local, MDS-specific AFTTPs, and applicable Technical Order guidance. Also see paragraph [3.13.4](#).

2.9.5. **Night Vision Devices (NVDs).** Crewmembers must undergo a MAJCOM-approved initial certification course IAW AFI 11-202, Volume 1, *Aircrew Training*, prior to their initial flight with NVDs (T-1). If wearing clear spectacles, contact lenses, or laser eye protection with NVDs, conduct preflight adjustments wearing both (T-1).

2.9.5. **(USAFESUP) Night Vision Devices (NVDs).** Initial NVD certification training will be conducted IAW AFI 11-202V1 and AFI 11-2MDSV1 specific Initial Qualification Training (IQT) guidance.

2.9.6. **Flashlights** (N/A for UAS). Each crewmember must have an operable flashlight for night operations (T-2).

Chapter 3

GENERAL FLIGHT RULES

3.1. Professional Flying Standards.

3.1.1. **Reckless Flying.** The PIC is responsible for ensuring the aircraft is not operated in a careless, reckless, or irresponsible manner that could endanger life or property (T-0).

3.1.2. **Unauthorized Flight Demonstrations.** Unauthorized or impromptu flight demonstrations, maneuvers, events, or “fly-bys” are prohibited. AFI 11-209, *Aerial Event Policy and Procedures*, addresses authorized flight demonstrations (T-1).

3.2. Nonrated Flyers. Flying unit commanders must ensure nonrated personnel and civilians who perform in-flight duties receive an indoctrination course on MDS-specific missions, egress, emergency procedures, and use of flight and emergency equipment (T-1). A preflight briefing does not qualify as an indoctrination course.

3.3. Transporting Passengers Under the Influence. Ensure personnel suspected to be under the influence of intoxicants or narcotics are not allowed to board a USAF aircraft except in an emergency or when authorized by command and control authority (T-0).

3.4. Tobacco Use. Tobacco use in all forms, including electronic nicotine delivery systems, is prohibited on all aircraft (T-1).

3.5. Transport of Drugs. Do not allow the transport of narcotics, controlled substances, or other dangerous drugs unless such transport has been approved by a US Military, Federal, or State authority (T-0).

3.6. Hazardous Cargo. Ensure compliance with AFJI 11-204, *Operational Procedures For Aircraft Carrying Hazardous Material* (T-1).

3.7. Flight Displays. Comply with MAJCOM or MDS-specific guidance for configuration of pilot-selectable flight displays.

3.7.1. **(Added-USAFESUP)** Pilot-selectable flight displays will be configured IAW AFI 11-2MDSV3, TO guidance, and MDS-specific AFTTPs.

3.8. Authorized Resources for Flight and Mission Related Duties. Conduct flight and mission-related duties with MAJCOM-approved devices and resources. MAJCOMs will establish policy on the use of personal, public, or non-DoD resources for flight and mission duties (e.g. personally-owned devices, non-DoD networks, commercial websites, etc.).

3.8. (USAFESUP) Authorized Resources for Flight and Mission Related Duties. USAFE-AFAFRICA units may use government issued devices IAW the current AF Life Cycle Management Center (AFLCMC) Electromagnetic Interference (EMI) Certification memorandum (<https://cs3.eis.af.mil/sites/AFLCMCEZA/E3/SitePages/Home.aspx>) and AFI 11-2MDSV3.

3.8.1. **(Added-USAFESUP)** USAFE-AFAFRICA aircrews will utilize DoD networks and websites to the maximum extent practical.

3.8.1.1. **(Added-USAFESUP)** The use of non-DoD networks and commercial websites may be utilized when other means are not practical. Aircrews are required to practice appropriate OPSEC procedures when utilizing these resources.

3.9. Portable Electronic Devices (PEDs). The PIC will prohibit the use of any PED suspected of creating interference with systems on the aircraft (T-0).

3.9.1. **Non-Transmitting PEDs.** The following may be used at any time or altitude: portable voice recorders, hearing aids, heart pacemakers, electric shavers, calculators, watches, or any other portable electronic device authorized by the MAJCOM (in coordination with the MDS Systems Program Office (SPO)).

3.9.2. **Transmitting PEDs .** MAJCOM/A3 (in coordination with the MDS SPO) may authorize use of PEDs at any altitude with transmitters ON or OFF. In the absence of MAJCOM guidance, the PIC may authorize use of PEDs at or above 10,000 ft. MSL with transmitter OFF (e.g. Airplane Mode).

3.9.2.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes Electronic Flight Bag (EFB) transmitter usage IAW the *Mobility Air Forces (MAF) Electronic Flight Bag Initiative Concept of Employment (EFB CONEMP)* and local guidance.

3.9.2.2. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of Wireless Access Points (WAPs) on OSA/EA aircraft IAW the AFLCMC EMI certification memorandum and the *AMC Procedures for Use of Carry-On 802.11 g/n Wireless Access Points (WAP) on OSA/EA Assets*.

3.9.2.3. **(Added-USAFESUP)** The use of other transmitting PEDs (other than cell phones) will be IAW AFI 11-2MDSV3.

3.9.3. **PED Connection to Aircraft.** MAJCOMs may authorize electrical connection of PEDs to aircraft power, data, or antennae with aircraft Program Manager approval. MAJCOMs will provide any applicable restrictions.

3.9.3.1. **(Added-USAFESUP)** The connection of PEDs to the aircraft will be IAW AFLCMC EMI certification memorandum, MAF EFB CONEMP, AFI 11-2MDSV3, and MDS-specific AFTTPs.

3.9.4. **PEDs used for Flight or Mission Duties.**

3.9.4.1. Information displayed on PEDs used to facilitate operation of the aircraft (e.g. Tech Orders, takeoff and landing data (TOLD)) will only be used as approved IAW AFI 11-215, *USAF Flight Manuals Program (FMP)* (T-1).

3.9.4.2. PEDs used to facilitate execution of the mission (e.g. portable electronic flight bags, portable Global Positioning System (GPS) units) will only be used as authorized by the MAJCOM. MAJCOMs (in coordination with the MDS SPO) will evaluate PEDs to minimize risks associated with mission completion, safety, and security.

3.9.4.2.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of Electronic Flight Bags (EFBs) for flight and mission duties IAW the MAF EFB CONEMP and local guidance.

3.9.4.2.2. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of all other PEDs IAW AFLCMC EMI certification memorandum, AFI 11-2MDSV3, and MDS-specific AFTTPs.

3.9.4.3. MAJCOMs (in coordination with the MDS SPO), will publish guidance on use of personally-owned hardware or software.

3.9.4.3.1. **(Added-USAFESUP)** The use of personally-owned devices, hardware, or software for flight or mission duties is not authorized.

3.9.5. **Photo and Video Recording Devices.** Pilot use of handheld photo or video recording devices is prohibited when that pilot is the only one with immediate access to the flight controls (T-3).

3.9.5.1. **(Added-USAFESUP)** The USAFE-AFAFRICA/A3 authorizes pilots of single seat aircraft to use approved and issued handheld photo or video recording devices when missions dictate.

3.9.5.2. **(Added-USAFESUP)** Units will consult local security personnel to ensure procedures for utilizing handheld photo or video recording devices are established to avoid compromise of classified information or sensitive TTP's.

3.9.6. **Medical Equipment.** Normally, only medical equipment referenced in the aircraft flight manual, MDS-specific instruction, or listed in the Air Force Medical Logistics website is permitted. See <https://medlog.us.af.mil/>

3.10. Aircraft Movement on the Ground. Comply with AFI 11-218, *Aircraft Operations and Movement on the Ground*, and locally published procedures (T-1).

3.10.1. **Clearances.** Obtain clearance from ATC before taxiing, proceeding onto a runway, takeoff or landing at an airport with an operating control tower (T-0). Precisely read back all taxi and hold short instructions (T-0). If a taxi route requires crossing any runway, hold short until obtaining specific clearance to cross each runway (T-0). Do not taxi across or onto the assigned runway without clearance from ATC (T-0).

3.10.2. **Surface Movement Guidance and Control System (SMGCS).** Obtain MAJCOM-directed training and certification before participating in SMGCS taxi operations (T-0). MAJCOMs shall publish MDS-specific guidance for aircrew required to operate at SMGCS locations in low visibility. See AFI 11-218 for further guidance.

3.10.2. **(USAFESUP) Surface Movement Guidance and Control System (SMGCS)** . USAFE-AFAFRICA SMGCS training, certification, documentation, and operations will be IAW AFI 11-218, AFI 11-2MDSV1, AFI 11-2MDSV3, local guidance, and MDS-specific AFTTPs.

3.11. Crew at Stations. Crewmembers must occupy their assigned duty stations from takeoff to landing unless absence is normal in the performance of crew duties or in connection with physiological needs (T-0). Pilots shall not leave their duty station unless another qualified pilot establishes control of the aircraft (T-0).

3.12. Sterile Cockpit. In the absence of MAJCOM guidance, aircrew of fixed-wing aircraft shall minimize non-essential cockpit conversations and other extraneous activities which could interfere with flight duties when below 10,000 ft. MSL, during critical phases of flight, and during all taxi operations.

3.13. Inflight Reporting. See also AFI 10-206, *Operational Reporting*.

3.13.1. **Flight Safety Conditions.** Immediately report hazardous weather conditions, wake turbulence, volcanic activity, large concentrations of birds or wildlife on or near the airfield, or any other significant flight condition that may affect aviation safety to the appropriate controlling agency (T-1). See pilot report (PIREP) procedures in the *Flight Information Handbook* (FIH).

3.13.2. **Minimum or Emergency Fuel Advisory.** Declare “minimum fuel” or “emergency fuel” to the appropriate controlling agency when the aircraft may land at the intended destination with less than the MDS-specific minimum or emergency fuel reserves.

3.13.3. **Position Reports.** Report position as requested by ATC, host-nation procedures, or ICAO procedures (T-0). See IFR Supplement for position report format.

3.13.3. **(USAFESUP) Position Reports .** Fighter aircrews are not responsible for position reporting when in-formation with a tanker (e.g., Coronet movements). Should circumstances dictate separation from the tanker, aircrew will attempt to remain in radio contact with a tanker who will relay position reports as required.

3.13.4. **Hazardous Laser Activity.** Report any hazardous laser activity. Reference AFI 11-301V4, *Aircrew Laser Eye Protection (ALEP)*, for specific actions (T-1).

3.13.4.1. **(Added-USAFESUP)** In addition to the reporting IAW paragraph **3.13.4.**, aircrew will report any unauthorized and/or suspected malicious LASER activity to applicable Host Nation (HN) military liaisons IAW local and HN rules/agreements.

3.13.5. **Electromagnetic Interference.** Report any electromagnetic interference IAW Joint Spectrum Interference Resolution (JSIR) procedures in the FIH and AFI 10-707, *Spectrum Interference Resolution Program* (T-1).

3.14. Oxygen and Pressurization Requirements (N/A for UAS).

3.14.1. **Oxygen.** Ensure sufficient oxygen for the planned mission is available to all occupants before takeoff (T-0). Normally, aircrew will use supplemental oxygen any time the cabin altitude exceeds 10,000 ft. MSL.

3.14.2. **Unpressurized Operations.** When mission essential, aircrew trained IAW AFI 11-403, *Aerospace Physiological Training Program*, may operate aircraft unpressurized up to Flight Level (FL) 250 IAW MAJCOM guidance and the following restrictions (T-1):

3.14.2.1. Without supplemental oxygen :

3.14.2.1.1. Altitude is limited to 14,000 ft. MSL (T-0).

3.14.2.1.2. Flight time between 10,000 and 12,500 ft. MSL is unrestricted, but shall not exceed 1 hour if any portion of the flight is conducted in IMC, at night (with or without NVDs), while employing weapons, conducting airdrop, air-refueling, or if performing high-g maneuvers (T-1).

3.14.2.1.3. Flight time between 12,500 and 14,000 ft. MSL shall not exceed 30 minutes (T-0).

3.14.2.1.4. If any occupant is not trained IAW AFI 11-403, altitude and flight time are limited to 13,000 ft MSL and 3 hours, but shall not exceed the limits in [paragraphs 3.14.2.1.2](#) and [3.14.2.1.3](#) (T-1).

3.14.2.2. Supplemental oxygen must be used by all occupants between 14,000 ft. MSL and FL250. Do not exceed FL250 unless occupants are wearing functional pressure suits (see paragraph 3.14.7) (T-1).

3.14.3. **Pressurized Operations.** Pilots flying pressurized operations will normally maintain a cabin altitude below 10,000 ft. and comply with the supplemental oxygen requirements in [Table 3.1](#). (T-1). If cabin altitude is between 10,000 ft. MSL and FL250, comply with [paragraph 3.14.2](#) (T-1).

Table 3.1. Oxygen Requirements for Pressurized Aircraft.

	Pilot(s) ¹	Cockpit Crew ²	Other Flight Deck Crew	Cabin/Cargo Area Crew	Pax
10,000 ft. through FL 250	R	R	R	A	NA
Above FL 250 to FL 350	One I/One R	R	R	A	A
Above FL 350 to FL 410 (two pilots at controls)	I	R	R	A	A
Above FL 350 to FL 410 (one pilot at controls)	One O/One A	I	R	A	A
Above FL 410 to FL 450	One O/ One I	I	R	A	A
Above FL 450 to FL 500	One O/ One I	I	I	A	A
Above FL 500 to FL 600	G	G	G	G	G
Above FL 500 (Sustained)	S	S	S	S	S

NOTE 1: Single-pilot aircraft must follow the most restrictive guidance in this table.

NOTE 2: Cockpit crew is defined as those crew positions with access to flight controls or responsibility for flight engineer panel, communication, or navigation systems.

LEGEND:

A - Oxygen available. Carry or place portable oxygen units or extra oxygen outlets with masks throughout the cabin/cargo area so that any person has quick access to oxygen should a loss of pressurization occur

R - Oxygen readily available. A functioning system and mask shall be located within arm's reach, and the regulator must be set to 100 percent and ON (when regulator is adjustable).

I - Oxygen immediately available. Must wear helmets with an oxygen mask attached to one side, or have available an approved quick-don style mask properly adjusted and positioned. Regulators shall be set to 100 percent and ON.

O - Oxygen mask ON. Regulator ON and normal.

G - Wear a partial pressure suit. Suit must provide 70mm Hg of assisted positive pressure breathing for altitude (pressure breathing for altitude system/get-me-down scenario).

S-Wear a pressure suit. Suit must provide a total pressure (atmospheric plus suit differential) of at least 141 mm Hg to the head and neck with adequate body coverage to prevent edema and embolism.

3.14.4. **Procedures for Loss of Cabin Pressure.** Initiate an immediate descent to the lowest practical altitude, preferably below 18,000 ft. MSL. Do not allow cabin altitude to remain above FL250 unless occupants are wearing functional pressure suits. If any occupant lacks functioning oxygen equipment, descend to an altitude of 13,000 ft. MSL or less (terrain or fuel requirements permitting) and comply with [paragraph 3.14.2](#).

3.14.4.1. If cabin altitude exceeds 18,000 ft. MSL following the unintended loss of cabin pressure, aircrew and passengers must be evaluated by a flight surgeon or other aviation medical authority prior to further flight (T-1). If cabin altitude cannot be determined, use the aircraft altitude at the time of the event. Report a loss of cabin pressurization IAW AFMAN 91-223.

3.14.5. **Decompression Sickness (DCS).** If any occupant exhibits DCS symptoms, descend as soon as practical and land at the nearest suitable installation where medical assistance can be obtained. Individuals suspected of DCS shall be administered and remain on 100% oxygen (using tight-fitting mask or equivalent) until evaluated by an aviation medical authority. Decompression sickness may occur up to 12 hours after landing. Aircrew will not fly after a DCS event without specific authorization from a flight surgeon (T-1).

3.14.6. **Hypoxia.** If anyone on the aircraft experiences hypoxia symptoms, descend immediately to the lowest practical altitude and land at a suitable location to obtain medical assistance. Aircrew will not fly after a hypoxia event without specific authorization from a flight surgeon (T-1). For hypoxia symptoms caused by an On-Board Oxygen Generation System (OBOGS), follow MDS-specific guidance.

3.14.7. **High Altitude Operations.** Without functional pressure suits, maintain a cabin altitude below FL250 and adhere to the time limits in Table 3.2. (T-1). For high-altitude airdrop missions, use the oxygen requirements in AFI 11-409, *High Altitude Airdrop Mission Support Procedures*. If the aircraft lands between missions and the time on the ground equals or exceeds the time spent at or above a cabin altitude of FL210, the time of allowable duration can be reset to the maximum (T-1).

Table 3.2. Cabin Altitude Time Limits (DCS Prevention) (N/A for U-2 Operations).

Time (minutes)	Cabin Altitude (ft. MSL)
0	At or Above FL 250
45	24,000 – 24,999
70	23,000 – 23,999
120	22,000 – 22,999
200	21,000 – 21,999

3.15. Aircraft Lighting. Operate aircraft lighting according to the following guidance or IAW host-nation rules and theater SPINS (T-0):

3.15.1. **Position Lights.** Illuminate position lights (one per side minimum) between official sunset and sunrise (T-0); and,

3.15.1.1. When an engine is starting or running. Aircraft that do not have power available before start shall turn them on as soon as power is available (T-0); or,

3.15.1.2. While being towed, or when parked in an area likely to create a hazard, unless clearly illuminated by an outside source (T-0).

3.15.2. **Anti-collision or Strobe Lights.** If equipped, turn anti-collision or strobe lights on from just prior to engine start until engine shutdown (T-0).

3.15.2.1. Aircraft that do not have power available before engine start shall turn anti-collision or strobe lights on as soon as power is available (T-0).

3.15.2.2. Flashing lights may be switched off or reduced in intensity if they adversely affect the performance of duties, or subject an outside observer to harmful glare (T-0).

3.15.3. **Landing Lights.** If equipped, landing lights should be turned on when takeoff clearance is received, when commencing takeoff roll at an airport without an operating control tower, or when operating below 10,000 ft. MSL within normal MDS-specific operating procedures. Unless safety or mission dictates, use landing lights when on an active runway (e.g., taxi exercise, taxiing onto a runway, or specific instructions).

3.15.4. **Reduced Aircraft Lighting.** MAJCOMs may authorize reduced or lights-out operations in restricted areas, warning areas, host-nation approved areas, or designated airfields. Designated airfields shall be documented in a Letter of Agreement (LOA) (T-1).

3.15.4. **(USAFESUP) Reduced Aircraft Lighting.** USAFE-AFAFRICA/A3 authorizes reduced/lights-out operations IAW AFI 11-2MDSV3, AFI 11-214, and HN rules/agreements. If a LOA is required due to a lack of HN regulatory documentation, the OG/CC (or equivalent) will ensure the LOA is reviewed annually for currency.

3.16. Airfield Lighting.

3.16.1. **Fixed-wing operations at night :**

3.16.1.1. Must comply with MDS-specific operating instructions, including comprehensive risk management (RM) measures (such as infrared (IR) lighting requirements, NVD usage, non-participating aircraft procedures, NOTAM issuance, weather and lunar illumination requirements and RM assessments) (T-2).

3.16.1.1.1. In the absence of MDS-specific operating instructions, do not conduct operations from a runway unless it is outlined with operable lighting or high-intensity runway reflective markers and is clearly discernible (T-2).

3.16.1.2. Are restricted to military airfields or civilian airports with an appropriate LOA during non-contingency operations from unlighted runways or landing zones (or those using high-intensity runway reflective markers) (T-0).

3.16.2. Covert IR runway lighting used by qualified crews equipped with NVDs meets the intent of lighted landing surface.

3.16.3. **Extreme Latitudes** . In Alaska, areas located north of 60° North latitude, Antarctica, and areas located south of 60° South latitude, aircraft may be operated to unlighted airports during the period of civil twilight.

3.17. Right-of-Way. Each pilot must take whatever action is necessary to avoid collision, regardless of who has the right-of-way. The yielding aircraft must not pass over, under, abeam, or ahead of the other aircraft until well clear.

3.17.1. **Distress.** Aircraft in distress have the right-of-way over all other air traffic.

3.17.2. **Converging.** When converging at approximately the same altitude (except head-on or approximately so), the aircraft to the other's right has the right-of-way. Aircraft of different categories have the right-of-way in the following order of priority: balloons, gliders, aircraft towing or refueling other aircraft, airships, rotary- or fixed-wing aircraft.

3.17.3. **Approaching Head-On.** If aircraft are approaching each other head-on or approximately so, each shall alter course to the right (T-0).

3.17.4. **Overtaking Aircraft.** An overtaken aircraft has the right-of-way. The overtaking aircraft must alter course to the right (T-0).

3.17.5. **Landing.** An aircraft established on final approach has the right-of-way over other aircraft on the ground or in the air, except when two or more aircraft are approaching to land. In this case, the aircraft at the lower altitude has the right-of-way but it shall not use this advantage to cut in front of or overtake the other (T-0).

3.18. Detect and Avoid. When meteorological conditions permit, pilots under instrument flight rules (IFR) or visual flight rules (VFR), whether or not under radar control, are responsible for avoiding traffic, terrain/obstacles, and environmental hazards.

3.18.1. Standard IFR separation is provided between aircraft operating under IFR in controlled airspace. Within the National Airspace System (NAS), ATC provides traffic advisories on VFR aircraft on a time-permitting basis. Outside the NAS, consult ICAO and country-specific guidance outlined in the FCG and FLIP.

3.18.2. UAS without approved sense and avoid capabilities will be operated under specific arrangements with appropriate aviation authorities (e.g., FAA, host nation, or military control) (T-0).

3.19. Proximity of Aircraft. Do not allow the aircraft to be flown so close to another that it creates a collision hazard (T-0). Use 500 ft of separation as an approximate guide except for:

3.19.1. Authorized formation flights.

3.19.2. Emergency situations requiring assistance from another aircraft. If an emergency requires visual checks of an aircraft in distress, exercise extreme care to ensure this action does not increase the overall hazard. The capabilities of the distressed aircraft and the intentions of the crews involved must be considered before operating near another aircraft in flight.

3.19.3. MAJCOM-approved maneuvers in which participants are aware of the nature of the maneuver and qualified to conduct it safely (e.g. interceptor visual identification training).

3.19.3.1. **(Added-USAFESUP)** In addition to AFI 11-2MDSV3, MDS-specific AFTTPs, local, and TO guidance, USAFE-AFAFRICA/A3 authorizes maneuvers IAW Allied Command Europe (ACE) Manual 75-2-1, *Fighting Edge Air-to-Air Training Rules*. Additionally, with concurrence of the PIC, aircrew may accept requests from European controllers for HN aircraft to conduct training intercepts.

3.20. Dropping Parachutists, Stores, or Other Objects. Do not allow objects to be dropped except in an emergency or for mission accomplishment (T-2). Report any accidental loss of equipment, aircraft parts, or cargo IAW AFI 10-206 and AFMAN 91-223.

3.21. Fuel Jettison. Do not jettison fuel except in an emergency or when required for mission accomplishment (T-2). When jettisoning fuel and circumstances permit, provide the appropriate ATC or flight service facility with intentions, altitude, location, and completion time. Report any jettisoning of fuel IAW AFI 10-206.

3.21.1. **(Added-USAFESUP)** Fuel jettison or fuel dumping will be reported to HN ATC IAW HN rules and agreements.

3.21.2. **(Added-USAFESUP)** Report fuel jettison or fuel dumping IAW AFI 10-206 reporting procedures. Aircrew will report either intentional or unintentional fuel jettison or fuel dumping which is likely to have adverse environmental consequences or elicit media coverage.

3.21.2.1. **(Added-USAFESUP)** Unless otherwise stated in AFI 11-2MDSV3, local, or HN guidance, aircrew will use 10,000 ft AGL as the altitude below which environmental consequences or elicit media coverage from fuel leakage/dumping may be a factor and therefore will report IAW AFI 10-206.

3.22. Radio, Laser, and Other Electromagnetic Emitter Restrictions. Equipment which transmits radio, laser, or other energy will only be operated for the intended purpose and in the authorized manner to prevent unintentional interference, damage, or injury (T-0).

3.23. Communication, Navigation, and Surveillance Equipment. Operate equipment as authorized by the MAJCOM (in coordination with the MDS SPO). MAJCOMs will establish tactical operations guidance. When operating in controlled airspace under IFR, immediately report to ATC the loss or impairment of navigational, air-to-ground communications, or surveillance capability IAW the FIH (T-0).

3.23. (USAFESUP) Communication, Navigation and Surveillance Equipment. USAFE-AFAFRICA/A3 authorizes units to operate communication, navigation and surveillance equipment during all operations IAW AFI 11-2MDS V3, MDS-specific AFTTPs and Combatant Commander's SPINS.

3.23.1. **Transponders.** Operate the transponder IAW ATC instructions, host nation procedures, MAJCOM directives, and theater SPINS. In the NAS, transponders will be operated in controlled airspace, including Mode C if installed, on the appropriate code or as assigned by ATC (T-0). Prior to aircraft movement at civil airports, transponders will be "ON" in the altitude reporting mode (T-0). At all other airports, unless local procedures dictate otherwise, transponders should be turned to the "ON" or normal altitude reporting mode.

3.23.1.1. **Mode S Flight ID** . Prior to each flight, ensure the Mode S Flight ID matches the call sign entered exactly on the flight plan with no embedded spaces, dashes, extra characters, or added zeros (T-0). When the flight plan call sign is less than seven characters, place blank spaces only at the end.

3.23.1.2. **Mode S Address** . Prior to each flight, ensure the Mode S address is entered correctly. MAJCOMs will manage assigned dynamic addresses to ensure no two aircraft are airborne with the same address.

3.23.1.2. **(USAFESUP) Mode S Address.** Reference [Attachment 10](#) for USAFE-AFAFRICA Mode S guidance.

3.23.1.3. **Mode 4/5** . If required, Mode 4/5 operations are outlined in the Flight Information Handbook (See MODE 4/5 in glossary).

3.23.1.3. **(USAFESUP) Mode 4/5.** Local guidance will clarify Mode 4/5 usage with respect to HN restrictions (reference applicable MIL AIPs and HN guidance on when to squawk Mode 4/5 within the boundaries of a specific country). This applies to deployed as well as home station operations.

3.23.1.4. **(Added-USAFESUP) Mode 3A/C.** Aircrew will reference AFI 11-2MDSV3 for further guidance on IFF equipment requirements and required self-tests prior to takeoff.

3.23.2. **Traffic Collision Avoidance System (TCAS).** Aircraft equipped with TCAS shall operate in the TCAS mode that provides both Traffic Alerts (TAs) and Resolution Advisories (RAs), unless otherwise dictated by the aircraft manual, formation flight requirements, MAJCOM guidance, mission requirements, or host-nation agreements (T-1).

3.23.2.1. **Response to TCAS Alerts** . Respond to all RAs regardless of ATC instructions, right-of-way rules, cloud clearance requirements, or other VFR/IFR flight rules, as directed by TCAS unless doing so would jeopardize the safe operation of the aircraft (e.g., descent into obstacles) (T-1).

3.23.2.1.1. Do not deviate from an assigned ATC clearance based solely on TA information (T-1). Attempt to attain visual contact and maintain safe separation.

3.23.2.1.2. In the event of an RA, alter the flight path only to the extent necessary to comply with the RA (T-1).

3.23.2.1.3. After deviating from an ATC clearance in response to an RA, notify ATC of the deviation as soon as practical and promptly return to the current ATC clearance when the traffic conflict is resolved or obtain a new clearance (T-0).

3.23.3. **Terrain Awareness and Warning Systems (TAWS).** Comply with appropriate flight manual procedures and MAJCOM guidance upon receipt of a Ground Proximity Warning System (GPWS)/TAWS/Enhanced GPWS (EGPWS)/Ground Collision Avoidance System (GCAS) warning. During Visual Meteorological Conditions (VMC) flight, terrain warnings do not need to be followed if the pilot can verify the warning is false by visual contact with terrain or obstacles.

3.23.3.1. **(Added-USAFESUP)** Aircrew will follow AFI 11-2MDSV3, local, MDS-specific AFTTPs, and TO guidance concerning the tactical use of GPWS/TAWS/EGPWS/GCAS.

3.23.4. **Global Positioning System (GPS) Equipment.**

3.23.4.1. MAJCOMs (in coordination with the MDS SPO), will determine if GPS is approved as the primary means of navigation and provide guidance for its use. If GPS is not approved as primary, ensure the approved primary means of navigation (e.g., VOR, TAC, etc.) is operational and monitored (T-0).

3.23.4.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of GPS equipment as a primary means of navigation IAW AFI 11-2MDSV3 guidance.

3.23.4.2. **GPS Standard Position Service (SPS) and Precise Position Service (PPS)** . Follow MAJCOM or SPINS guidance on use of SPS/PPS.

3.23.4.3. Receiver Autonomous Integrity Monitoring (RAIM) is required unless integrity is ensured by other means approved by the MAJCOM (T-0).

3.23.4.3.1. **Active RAIM** . If RAIM is not available, actively monitor an alternate means of navigation and inform ATC of any degraded capability (T-0).

3.23.4.3.2. **Predictive RAIM (P-RAIM)** . Check P-RAIM prior to departure when possible (T-0). If RAIM is predicted to be unavailable for more than five minutes along the route of flight, the flight must rely on other approved equipment, be rerouted, or delayed (T-0). Not required if Wide-Area Augmentation System (WAAS) enabled and flight is in WAAS coverage area (T-0).

3.23.5. **RNAV Equipment other than GPS.** (eLORAN, Inertial, Stellar, Doppler, Blended, Hybrid, Tightly-Coupled, EGI, DME/DME, GNSS other than GPS, etc.). MAJCOMs (in coordination with the MDS SPO), will determine if RNAV equipment other than GPS is approved as the primary means of navigation and provide guidance for its use. If not approved as primary, ensure the approved primary means of navigation (e.g., VOR, TAC, etc.) is operational and monitored (T-0).

3.23.5.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of RNAV equipment other than GPS as a primary means of navigation IAW AFI 11-2MDSV3 guidance.

3.23.6. **Carry-On Equipment.** Use carry-on communication, navigation, and surveillance equipment as authorized by the MAJCOM (in coordination with the MDS SPO). MAJCOMs will publish guidance and provide training on acceptable use, limitations, and hazards of carry-on equipment. See also paragraph 3.9.

3.23.6.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of carry-on equipment IAW the AFLCMC EMI certification memorandum, AFI 11-2MDSV3, MDS-specific AFTTPs, and the MAF EFB CONEMP. Units will complete and document training, limitations, and hazards of carry-on equipment IAW 11-2MDSV1, MDS-specific AFTTPs, and local guidance.

3.24. Formation Flights (Including Air Refueling). Accomplish formation flights only as authorized by the MAJCOM.

3.24. (USAFESUP) Formation Flights (Including Air Refueling). USAFE-AFAFRICA/A3 authorizes formation flights IAW ACE Manual 75-2-1, AFI 11-2MDSV3, local and HN guidance, NATO ATP-3.3.4.2, *Air to Air Refueling*, and MDS-specific AFTTPs.

3.24.1. **Formation Briefing** . Formation flight leads will brief formation flight operations to all participants in accordance with MAJCOM-approved guidance (T-0).

3.24.2. **Formation in Reduced Vertical Separation Minimum (RVSM) Airspace within the NAS.** Formation flights may operate in RVSM airspace if all participating aircraft are RVSM compliant or approved by ATC (T-0).

3.24.3. **Aircraft Lighting** . MAJCOMs may authorize formation flights to vary lighting configuration according to the aircraft type and mission requirement. The MAJCOM must provide guidance on this type of operation and ensure the guidance provides an equivalent level of visual identification as a single aircraft.

3.24.3.1. **(Added-USAFESUP)** Aircraft lighting during formation flights (including air refueling) will be IAW AFI 11-2MDSV3, local and HN guidance, NATO ATP-3.3.4.2, and MDS-specific AFTTPs.

3.24.4. **Transponder Operations** .

3.24.4.1. Only one aircraft (normally the lead) of a standard formation should squawk (T-0).

3.24.4.2. Unless otherwise directed, receivers will not squawk when less than 3 nautical miles (NM) from the tanker (T-0).

3.24.4.3. Unless otherwise directed by ATC, all aircraft within a non-standard formation flight will squawk until established within the assigned altitude block and closed to the proper enroute interval (T-0). When aircraft interval exceeds 3 NM, both the formation leader and the last aircraft will squawk (T-0).

3.24.4.3.1. **(Added-USAFESUP)** USAFE-AFAFRICA aircrews will squawk IAW HN rules and agreements or as-directed by HN controllers. In the absence of HN guidance, follow paragraphs above.

3.24.5. **Traffic Collision Avoidance System (TCAS) Operations** .

3.24.5.1. Formation leads (and last aircraft, when formation length exceeds 3 NM) shall operate in TA mode unless otherwise required by ATC, host-nation agreement or specified in the MDS-specific guidance (T-0).

3.24.5.2. During refueling operations, the tanker aircraft will operate in TA mode (T-0).

3.24.6. Non-standard Formations. Non-standard formation flights may be conducted:

3.24.6.1. When approved by ATC;

3.24.6.2. Operating under VFR in VMC;

3.24.6.3. Operating within an authorized Altitude Reservation (ALTRV);

3.24.6.4. Operating under the provisions of a LOA; or,

3.24.6.5. Operating in airspace specifically designated for a special activity.

3.24.7. (Added-USAFESUP) Dissimilar Formation Flights.

3.24.7.1. **(Added-USAFESUP)** Aerial Events (as defined IAW AFI 11-209). Reference AFI 11-209 for definitions and guidance on “Dissimilar Formation Flyovers” conducted in support of military or public events (e.g., Air/Trade Shows, etc.) held for community relations or ceremonial purposes. See paragraph **3.30.** also.

3.24.7.2. **(Added-USAFESUP)** Multinational Training Deployment Flyovers. A “dissimilar formation” is defined as a formation made up of aircraft either from different MDSs, different nations, or both. Dissimilar formations recovering from multinational training missions and planning to fly over and/or recover at US or HN staging bases are considered part of the overall training mission and do not fall under AFI 11-209 requirements. This applies regardless of media or DV observance of the formation.

3.24.7.2.1. **(Added-USAFESUP)** Units will notify USAFE-AFAFRICA/A3 of their intent to conduct a dissimilar formation flyover as part of any multinational training deployment via the USAFE/A3TV (Workflow) organizational email account (usafea3tv.a3tv@us.af.mil) NLT two weeks prior to the event.

3.24.7.3. **(Added-USAFESUP)** For all other dissimilar formations (operational and training), USAFE-AFAFRICA/A3 authorizes operations IAW AFI 11-214, AFI 11-2MDSV3, and MDS-specific AFTTP guidance. USAF flight leads will ensure all formation members know and understand applicable HN rules and agreements, and any applicable SPINS and Training Rules (e.g., ACE Manual 75-2-1).

3.25. Large Scale Exercises. MAJCOMs will conduct large-scale exercises in permanent or temporary Special Use Airspace (SUA) established according to FAA Joint Order (JO) 7400.2, *Procedures for Handling Airspace Matters*, and FAA JO 7610.4, *Special Operation*. When MAJCOMs approve large-scale exercises or short-term special missions they will ensure information on approved activities is available to the non-participating flying public and coordinate these operations with:

3.25. (USAFESUP) Large Scale Exercises. FAA Handbook 7400.2 and FAA JO 7610.4. **DO NOT** apply within the USAFE-AFAFRICA AOR. Large-scale exercises involving only US forces within the USAFE-AFAFRICA AOR will be coordinated with HN military liaisons IAW HN rules and agreements. Large scale exercises involving US forces and forces from other countries will be coordinated IAW NATO standards and procedures (i.e., through the applicable NATO CAOC).

3.25.1. Affected non-participating military flying units;

3.25.2. Affected FAA Air Route Traffic Control Center (ARTCC);

3.25.3. Affected FAA regions through the Air Force representative (AFREP); and,

3.25.4. Other agencies, as appropriate.

3.26. Aerobatics and Air Combat Tactics. Aerobatics, air combat tactics and air-to-ground tactics which involve aerobatic type maneuvering must be performed in SUA, ATC-Assigned Airspace (ATCAA), military training routes (MTRs) or host-nation approved airspace IAW the

guidelines in AFI 11-214, *Air Operations Rules and Procedures* (T-0). Aircraft deployed or based at overseas locations will operate IAW applicable host-nation agreements or ICAO SARPs (T-0). If the aircraft operating requirements (altitude requirements, maximum airspeeds, dropping of objects, etc.) dictated in the host-nation agreement are less restrictive than USAF/MAJCOM guidance, the most restrictive guidance shall be used (T-1).

3.26. (USAFESUP) Aerobatics and Air Combat Tactics. In the UK, aerobatics and air combat tactics may be performed anytime aircraft are under “Traffic Service” or “Deconfliction Service” (reference UK MIL AIP). “SUA” also includes all HN-defined low-level operating airspace/routes as defined in HN AIPs.

3.27. Temporary Flight Restriction (TFR) Airspace. Aircraft will not operate in TFR airspace unless authorized (T-0).

3.28. Uncontrolled Field Procedures. Use the runway favored by the winds unless safety, air traffic considerations, or mission accomplishment makes another option more suitable (T-0). Announce your activities on the appropriate frequencies (T-0). UAS operations are prohibited at uncontrolled fields when other traffic is present (T-2).

3.28.1. **(Added-USAFESUP)** When conducting approved operations at a closed airfield, use uncontrolled field procedures IAW paragraph **3.28.**

3.28.2. **(Added-USAFESUP)** All operations to uncontrolled LZs will be IAW AFI 13-217, AFI 11-2MDSV3, and MDS-specific AFTTPs.

3.29. Obstacle Clearance Responsibility. Pilots are never relieved of the responsibility for terrain and obstacle avoidance. The radio call “Radar Contact” only means the aircraft has been identified on radar. Responsibility is shared between pilot and controller only after navigational guidance is issued.

3.30. Participating in Aerial Events. Ensure compliance with AFI 11-209 when participating in aerial events, demonstrations, and static displays.

3.30.1. **(Added-USAFESUP)** Reference paragraph **3.24.7.** concerning dissimilar formations.

3.31. Simulated Instrument Flight.

3.31.1. For non-instrument qualified pilots, a safety observer who is able to clear outside at all times should accompany the flight either as a crewmember or in a chase aircraft. If a chase aircraft is used, maintain continuous visual contact and two-way communications between aircraft. A safety observer is defined as a current and qualified instrument pilot or a fighter weapons systems operator (or other MAJCOM-designated aircrew member) with access to a set of flight controls.

3.31.2. **Vision Restricting Devices** . MAJCOMs must approve the use of vision restricting devices and provide specific approval for use during takeoffs and landings. Vision restricting devices will not be used without a safety observer (T-0).

3.31.2.1. Maintain at least 2,000 ft. of obstruction clearance when using vision restricting devices if the safety observer is in a chase aircraft, or not qualified as a pilot, or does not have full view of the flight instruments and access to the flight controls (T-2).

3.31.3. When not on an IFR flight plan, the aircraft must be equipped with a functional two-way radio and have the airport environment in sight when established on the final segment of an approach (T-0).

3.32. Simulated Emergency Flight Procedures.

3.32.1. Terminate simulated emergency training if an actual emergency occurs.

3.32.2. MAJCOMs must provide guidance when an instructor pilot or flight examiner does not have immediate access to the aircraft controls.

3.32.2.1. **(Added-USAFESUP)** Instructor Pilots (IP) and flight examiners chasing SFOs/ELPs will execute chase only IAW AFI 11-2MDSV3, local guidance, and MDS-specific AFTTPs.

3.32.3. Passengers will not be onboard unless specifically approved by MAJCOM and with PIC concurrence (N/A for UAS).

3.32.4. Single-pilot aircraft require day VMC (including civil twilight)(N/A for UAS) (T-2).

3.32.5. Multi-pilot aircraft in day IMC require weather conditions at or above published circling minimums for the approach to be flown (N/A for UAS) (T-2).

3.32.6. Multi-pilot aircraft at night require weather conditions at or above 1,000 ft. ceiling and 2 SM visibility or circling minimums, whichever is higher (N/A for UAS) (T-2).

3.32.7. **Simulated Flameout, Forced Landing, or Emergency Landing Patterns (SFO/ELP)** . At controlled fields where SFO/ELP maneuvers are conducted, the facility air traffic manager shall issue an LOA with the appropriate military authority and adjacent facilities as required. The LOA shall conform to FAA Joint Order (FAA JO) 7610.4. (T-0).

3.32.7. **(USAFESUP) Simulated Flameout, Forced Landing, or Emergency Landing Patterns (SFO/ELP)**. SFO/ELP maneuvers may be conducted IAW HN rules/agreements at all fields where USAFE-AFAFRICA aircraft operate. An LOA is not necessary unless required by HN.

3.32.7.1. MAJCOMs must provide guidance for SFO/ELP approaches when the T.O.s do not provide specific guidance; the approaches do not conform to the T.O. guidance; the approaches have not been coordinated with the ATC responsible for the airspace; or the airport/landing area does not have a prepared runway surface, an active tower/ Runway Supervisory Unit (RSU), enough runway, or proper crash/rescue equipment.

3.32.7.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA units will execute SFOs/ELPs IAW AFI 11-2MDSV3, local and TO guidance, and MDS-specific AFTTPs. If no guidance exists or conditions in paragraph **3.32.7.1** exist, units must request approval from USAFE-AFAFRICA/A3 IAW paragraph **1.2.5** .

3.32.8. **(Added-USAFESUP)** Except as authorized/restricted in AFI 11-2MDSV3, USAFE-AFAFRICA aircrew will adhere to the following additional guidance concerning simulated EPs.

3.32.8.1. **(Added-USAFESUP)** Unusual attitude recoveries may only be conducted in VMC and when a flight examiner or IP has immediate access to the flight controls.

3.32.8.2. **(Added-USAFESUP)** Do not perform actual engine shutdown in-flight. **Exception:** Functional Check Flight (FCF) certified aircrew may perform actual in-flight engine shutdown in conjunction with and FCF or FCF training sortie (see [Attachment 8](#)).

3.32.8.3. **(Added-USAFESUP)** Do not perform simulated engine-out takeoffs.

3.32.8.4. **(Added-USAFESUP)** Perform practice barrier engagements IAW AFI 11-2MDSV3 and AFI 32-1043, *Managing, Operating, and Maintaining Aircraft Arresting Systems*.

3.32.8.5. **(Added-USAFESUP) Fixed Wing Only:** Do not perform practice aborts on takeoff.

3.33. Vertical-Lift Operations. For this instruction, tilt-rotor aircraft in vertical-flight mode will follow helicopter guidance. MAJCOMs will provide guidance on determining phase-of-flight for aircraft capable of transition to/from vertical flight.

Chapter 4

PREFLIGHT

4.1. Flight Authorization. Flights in USAF aircraft will be authorized and documented IAW AFI 11-401 and MAJCOM guidance (T-1).

4.2. Pilot in Command. The PIC must be current and qualified in the aircraft to be flown or under the supervision of a current and qualified instructor pilot (to include supervision from a formation position) (T-0). If any portion of the flight will be conducted in IMC or under IFR, the PIC must hold a current instrument qualification (T-0). **Exception:** Student pilots enrolled in Undergraduate Flying Training courses, Introduction to Fighter Fundamentals, and Pilot Instructor Training may act as PIC for syllabus-directed solo flights IAW FAA JO 7610.4 (T-0).

4.2. (USAFESUP) Pilot in Command. Upgrading/requalifying pilots of single-pilot aircraft who do not have an instrument qualification may fly under IFR when under the direct supervision (includes flying in formation) of a current/qualified IP as part of a training program leading to instrument (re)qualification (See also AFI 11-202V2).

4.3. Approval Authority. The individual(s) designated on the Flight Authorization as the PIC is the approval authority for the flight (T-1).

4.3.1. Flying unit commanders must approve fixed-wing aircraft operations from other than established landing surfaces (e.g. highways, pastures) (T-2).

4.3.1.1. **(Added-USAFESUP)** Reference AFI 13-217, AFI 11-2MDSV3, MDS-specific AFTTPs, and associated USAFE supplements for further guidance.

4.4. Flight Accountability. To ensure flight accountability, file a flight plan IAW GP or provide the intended route of flight to a C2 mission agency (T-2). If filing by electronic or telephonic means and departing from a DoD airfield, provide base operations with a copy of the flight plan for flight following. Use DD Form 1801, *DoD International Flight Plan*, if any portion of the flight requires RNAV. If unable to file on the ground, once airborne, file a flight plan with a Flight Service Station (FSS) or ATC facility as soon as practicable while staying clear of restricted airspace and flying VFR in controlled airspace.

4.5. Mission Planning Requirements.

4.5.1. Plan missions to the maximum extent possible. Obtain current and relevant information at all possible opportunities, including:

4.5.1.1. Weather observations and forecasts (T-0). See also [paragraph 4.12](#);

4.5.1.1.1. **(Added-USAFESUP)** Wind and Sea State Restrictions for Ejection Seat Aircraft . Tactical maneuvering during training will not be conducted when surface winds in the intended area of operations exceed 35 knots steady state over land (25 knots steady-state over water) or when sea states exceed 4 meters wave height. (T-3). This is not intended to restrict point-to-point or aerial refueling operations. Aircraft may transit and/or conduct air refueling operations, but not tactically maneuver over areas when these limits are exceeded.

4.5.1.2. NOTAMs, to include SUA and TFRs (T-0);

- 4.5.1.2.1. **(Added-USAFESUP)** Prior to all flights within the USAFE-AFAFRICA AOR and when operating from locations not having a DoD NOTAM service, aircrew will reference the applicable HN NOTAM service to include low-level NOTAMs if provided. If the HN does not provide a NOTAM service, obtain required NOTAM information by whatever means available.
- 4.5.1.2.1.1. **(Added-USAFESUP)** For UK-specific low-level operations, aircrew will also ensure they are familiar with any NOTAMs/TFRs affecting UK “Royal” Flights (contact 48 OSS/OSO, 48oss.oso@us.af.mil, DSN: 314-226-3682).
- 4.5.1.3. Airfield Suitability and Restrictions Report (ASRR) information if required by MAJCOM;
- 4.5.1.3.1. **(Added-USAFESUP)** USAFE-AFAFRICA MAF aircrews will comply with the AMC ASRR. Current ASRR information is available on GDSS2 (<https://gdssams.maf.ustranscom.mil/gdss2web/gdss2main.php>). Aircraft that are not specifically mentioned in ASRR/Giant Report will comply with non-aircraft specific restrictions (e.g., “Day Only”).
- 4.5.1.3.2. **(Added)** (USAFESUP) Information for an airfield may be added/deleted to the AMC ASRR IAW ASRR general guidance. Notify USAFE-AFAFRICA/A3 of ASRR change submissions via the USAFE/A3TV (Workflow) organizational email account (usafea3tv.a3tv@us.af.mil).
- 4.5.1.3.2.1. **(Added-USAFESUP)** The USAFE-AFAFRICA/A3 delegates waiver authority for all pavement condition, PCN tire pressure limitations, weight bearing capacity, and day only restrictions listed in the AMC ASRR to the USAFE-AFAFRICA/A3T. Unless specified in AFI 11-2MDSV3, waiver authority for all other restrictions is the USAFE-AFAFRICA/A3. See paragraph **1.2.5.**
- 4.5.1.3.3. **(Added-USAFESUP)** Airfields not contained in the AMC ASRR/GDSS airfield database are considered unsuitable for aircraft operating USAFE-AFAFRICA missions. **Exception:** USAFE-AFAFRICA C-130 missions may operate at unimproved landing zones not contained in the AMC ASRR/GDSS airfield database IAW AFI 13-217, AFI 11-2MDSV3, MAJCOM Zone Availability Report (ZAR) guidance, and Talon Point.
- 4.5.1.3.4. **(Added)** (USAFESUP) If mission requirements dictate operating into an airfield not contained in the AMC ASRR/GDSS airfield database, the mission planning agency will contact the HQ AMC Airfield Suitability Office (see paragraph **4.5.1.3.2.**) to request a suitability determination. The airfield will be added to the ASRR/GDSS airfield database once HQ AMC completes the requested review.
- 4.5.1.3.5. **(Added-USAFESUP)** If there is a discrepancy between the ASRR and FLIP, aircrews will use the most current guidance. Aircrews will contact HQ AMC Airfield Suitability Office/AMC Airfield/Help Desk at DSN: 312-779-3112 or (Airfield.Helpdesk@us.af.mil) and the HQ USAFE-AFAFRICA TERPS (usafe.terps@us.af.mil) to address the discrepancy.

- 4.5.1.4. FLIP, to include appropriate navigational and plotting charts with current vertical obstructions (T-0);
- 4.5.1.5. Fuel requirements (T-0);
- 4.5.1.6. Bird advisories and hazard information (T-2);
- 4.5.1.6.1. **(Added-USAFESUP)** USAFE-AFAFRICA aircrews will reference the applicable bird hazard advisory system for their area of operations (e.g., NATO Bird Notice to Airmen (BIRDTAM) system (<https://www.notams.jcs.mil/common/birdtam.html>), UK Bird Avoidance Model Geographic Information System (BAMGIS) models (<https://www.aidu.mod.uk/Milflip/index.php>)). Aircrews will comply with local/HN bird avoidance procedures and advisories. If no HN system exists, units should contact Flight Safety and local airfield operations for mitigation procedures.
- 4.5.1.7. Special Departure Procedures (SDP) if authorized by MAJCOM;
- 4.5.1.8. As applicable: P-RAIM, Space Based Augmentation System (SBAS) coverage and NOTAMs, and air traffic management Service Availability (e.g. Automatic Dependent Surveillance-Broadcast (ADS-B) services) (T-0);
- 4.5.1.9. Aircraft T.O. (T-0);
- 4.5.1.10. MDS-specific, Volume 3 (T-1); and,
- 4.5.1.11. Applicable MAJCOM/COCOM guidance (e.g. flight crew information files (FCIFs) and flight crew bulletins (FCBs)).
- 4.5.1.11.1. **(Added-USAFESUP) Risk Management (RM) Program.** RM is a shared responsibility between commanders, supervisors and aircrew. Incorporate RM into daily flight operations to identify risks associated with the mission and identify areas of risk mitigation. Ensure risk decisions are elevated to the appropriate authority level, the authority level required to release the mission. The appropriate level for risk decisions is the one that can allocate the resources to reduce the risk or eliminate the hazard and implement controls.
- 4.5.1.11.1.1. **(Added-USAFESUP)** Units will ensure a risk assessment is completed and documented for each aircraft and its pilot/crew prior to being released for the mission.
- 4.5.1.11.1.2. **(Added-USAFESUP)** Units will tailor the RM process to the MDS, mission, environment, and other unit-specific elements. RM process guidance can be found in AFPD 90-8, *Environment, Safety & Occupational Health Management and Risk Management*, AFI 90-802, *Risk Management*, and AFPAM 90-803, *Risk Management (RM) Guidelines and Tools*, all of which provide definitions, guidelines, procedures and tools for effective RM integration and execution.

4.5.1.11.2. **(Added-USAFESUP) Threat Assessment and En-Route Security Capabilities Briefing (MAF Only).** When required, USAFE-AFAFRICA aircrews will receive a threat assessment briefing from the supporting Intelligence flight (or equivalent) and en-route security capability evaluation briefing from the augmented security team (e.g., Phoenix, Raven, and Fly Away Security Team (FAST)).

4.5.2. **International Flights.** Comply with international procedures in FLIP GP, Area Planning (AP), ICAO guidance, host-nation procedures, and the FCG (T-0).

4.5.2.1. On all departures to or from a foreign location, use extra vigilance when checking passenger manifest, cargo, and likely areas aboard the aircraft where drugs, contraband, stowaways, or other illegal substances may be concealed.

4.5.2.2. Immediately report any suspected customs, agriculture, or immigration violations to the proper authorities.

4.6. Off-Station Training. Flying unit commanders will ensure off-station training is planned to achieve valid training requirements, presents a positive view of the USAF, and does not create an appearance of government waste or abuse (T-2).

4.6. (USAFESUP) Off-Station Training. Except for emergencies and specific USAFE-AFAFRICA directed missions, HN airfields planned for use by a USAFE-AFAFRICA aircraft must meet the requirements outlined in this publication. See [Attachment 6](#).

4.7. Military and Joint-Use Airports. Aircrew may file to and land at US military and Joint-Use (i.e. MIL/CIV) fields.

4.8. Civil Airports.

4.8.1. MAJCOMs may authorize filing to or landing at civil airfields. Use of civil facilities not governed by agreement or law may result in landing fees or use fees charged to the pilot or the military unit.

4.8.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the filing to or landing at civil airfields IAW AFI 11-2MDSV3 and local guidance. When filing to/landing at foreign civil airfields, aircrew will ensure familiarity with applicable HN guidance and procedures. See [Attachment 6](#) Control of Fighter Aircraft for Off-Station Sorties/Diverts.

4.8.2. **“P-coded” Civil Airports** (as listed in the IFR Supplement). Aircrew may file to or land USAF aircraft at US civil public airports when:

4.8.2.1. In an emergency;

4.8.2.2. Flying a helicopter or C-coded aircraft (e.g. C-130, C-12, C-40);

4.8.2.3. Necessary in the recovery of active air defense interceptor aircraft;

4.8.2.4. An alternate is required and no other suitable airport is available;

4.8.2.5. The wing commander or higher authority approves the flight and the airport manager grants permission in advance; or,

4.8.2.6. A US Government tenant unit (e.g. ANG, USCG) is listed for the airport of intended landing and airport facilities or ground support equipment can support the aircraft concerned.

4.8.3. **(Added-USAFESUP)** Units will establish hot armament, hung ordnance, hot brakes and all other MDS-specific safety procedures (e.g., hydrazine) to included planned and divert airfields.

4.9. Volume Training. Flying units shall coordinate with respective ATC agencies and civil airport authorities before conducting volume training at civil airports or within airways (T-2).

4.9. (USAFESUP) Volume Training. USAFE-AFAFRICA units may conduct training at HN civil airports or in controlled airspace only IAW HN rules and agreements.

4.10. UAS Airfields and Operations.

4.10.1. Except for divert or emergency situations, MAJCOMs shall approve all airfields authorized for use by UAS. Operations may require an approved Certificate of Authorization (COA) and appropriate LOA between the employing unit, ATC, and airfield management.

4.10.1.1. **(Added-USAFESUP)** Except for divert or emergency situations, airfield approval requests for UAS operations will be staffed through HQ USAFE-AFAFRICA/A3C (usafea3c.a3ctaskers@us.af.mil) and approved by USAFE-AFAFRICA/A3, in close coordination with the owning command and responsible COCOM.

4.10.2. For operations outside special use airspace (or when required within), the mission tasking authority shall coordinate through HQ USAF/A35 to obtain a COA or waiver from the FAA (T-0). Before submitting, verify the COA complies with current FAA requirements at <http://www.faa.gov/about/initiatives/uas/>.

4.11. Aviation Into-Plane Reimbursement Card (AIR CARD ®) Responsibilities. Use the AIR CARD® only for fuel and required ground services (T-0). Refuel at military installations as a first choice followed by contract fixed base operators (FBOs) (T-0). Refuel at non-contract FBOs only if mission needs warrant servicing at such locations (T-0). Further information, including documentation procedures and updated lists of contract FBOs is available at <https://www.airseacard.com>.

4.11.1. **(Added-USAFESUP)** AFI 11-253, *Managing Off-Station Purchases of Aviation Fuel and Ground Services*, establishes the USAF AIR Card program and provides procedures for its management and use. Additionally, units will ensure receipt documentation accurately reflects supplies/services rendered and retain all receipts. Record all purchases on the AF Form 664, *Aircraft Fuels Documentation Log*, regardless of whether the vendor provides a receipt. If a vendor refuses to provide a receipt, document the point-of-sale information by whatever means possible and store the documentation in the AF Form 664. Report the situation to the wing refueling document control officer upon return (contracted vendors are to provide receipts in accordance with the terms of their contract). Further information, including documentation procedures and updated lists of contract FBOs is available at <https://aircardsys.com>.

4.12. Weather Information.

4.12.1. **Authorized Sources.** Use the following prioritized list of sources (T-1):

4.12.1.1. Home or local installation OSS Weather Flight or MAJCOM-designated centralized briefing facility (or equivalent);

4.12.1.1.1. **(Added-USAFESUP)** The 603 AOC is designated as the home/local installation OSS weather flight equivalent for weather information on all USAFE-AFAFRICA in-flight managed missions.

4.12.1.2. Regional Operational Weather Squadron (OWS);

4.12.1.3. Other DoD military weather sources (e.g., US Navy/Marine Corps weather facilities);

4.12.1.4. Other published MAJCOM-approved weather sources. MAJCOMs will provide guidance on use of non-DoD weather sources (e.g., commercial websites, flight planning services);

4.12.1.5. Other US Government (USG) weather facilities/services (e.g., National Weather Service, FAA);

4.12.1.5.1. **(Added-USAFESUP)** To include, other US Government contracted weather services (i.e., Jeppesen, ARINC, ect.).

4.12.1.6. Foreign civil or military weather service (use only when DoD military resources or USG services are unavailable in OCONUS locations).

4.12.2. **Runway Visual Range (RVR)** . RVR reports apply to all takeoffs, landings, and straight-in approaches to the runway and take precedence over any other visibility report for that runway. Use the static RVR when available. If only a variable RVR report is received and a static RVR cannot be determined, apply the lowest reported RVR value. If necessary, convert the reported visibility from one format to another (e.g. RVR to Prevailing Visibility (PV)) only for takeoffs and straight-in approaches using the conversion tables printed in the front of the Terminal Procedures Publication (TPP) booklet. For conversions, use the higher value; do not interpolate.

4.12.2.1. If RVR is unavailable, use PV.

4.12.2.2. **(Added-USAFESUP)** “TPPs” are FAA (therefore CONUS/Alaska/Hawaii/Puerto Rico/Pacific Territories/Virgin Islands) products; the term “TPP” includes all USG and TERPS-reviewed non-USG FLIP. If operating in areas of FAA TPP coverage, aircrew can find the current TPPs from the FAA (http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dtpp/). Select the search application and type in the appropriate airport identifier.

4.12.2.2.1. **(Added-USAFESUP)** For areas without FAA NACO TPP coverage, aircrew may use the conversion tables in DoD FLIP, Jeppesen IAP booklets, or HN AIP guidance. In all cases, **do not** interpolate values. Use the greater of either the next higher value in the conversion chart or the highest published value from the IAP minima block.

4.12.2.3. **(Added-USAFESUP)** Weather minima will be IAW AFI 11-2MDSV3 determination of aircraft category. When RVR is not reported, PV will be used based on the highest of ATIS, ATC provide weather, or TO-certified on-board weather reporting system.

4.13. Aeronautical Information and Publications. Operational commanders are responsible for providing their crews with access to appropriate aeronautical information and publications for flight (T-1).

4.13.1. **Authorized Information and Publications.** Obtain and use information or publications from US Government (USG) sources as first preference (T-2). Do not use aeronautical information in flight which is out of date, incomplete, illegible, contains unfamiliar procedures, or is published in a language other than English (T-0).

4.13.1. **(USAFESUP) Authorized Information and Publications.** Units may use out of date aeronautical information for ground training/testing only (e.g., IRC). For simulators, units will ensure the most current aeronautical information is based on the software loaded in the SIM (e.g., if new FLIP contains a procedure that is not supported by the current SIM software, the most current version of the FLIP that is supported will be used). In all cases, out-of-date publications must be clearly marked “For Ground Training Use Only” or “For Training Use Only.”

4.13.1.1. **Non-USG Terminal Procedures.** Non-USG terminal procedures are authorized after a Terminal Instrument Procedures (TERPS) review IAW AFI 11-230, *Instrument Procedures*; this does not apply to Standard Terminal Arrival Procedures (STARs). MAJCOM/A3 in the grade of O-8 or above (or the first O-8 in the MAJCOM/A3 chain of command) may waive the TERPS review. This waiver authority will not be further delegated (T-0). MAJCOMs shall develop aircrew training for use of non-USG products.

4.13.1.1. **(USAFESUP) Non-USG Terminal Procedures.** HN/foreign instrument procedures that have been reviewed by TERPS are available on GDSS 2 (<https://gdssama.maf.ustranscom.mil/vdesk/hangup.php3>). Aircrew MUST ensure the procedure has a current TERPS review prior to use (see paragraph 4.13.1.2) for all other HN/foreign instrument procedures.

4.13.1.1.1. **(Added-USAFESUP)** Restrictions contained in other MAJCOM review letters apply to all USAFE-AFAFRICA and USAFE-AFAFRICA gained aircrews unless a superseding USAFE-AFAFRICA specific restriction or waiver is annotated.

4.13.1.1.2. **(Added-USAFESUP)** USAFE-AFAFRICA aircrew will receive initial non-USG IAP training as part of Theater Indoctrination (TI) IAW AFI 11-202V1 and AFI 11-2MDSV1 guidance. Refresher training will be incorporated into the local IRC IAW AFMAN 11-210, *Instrument Refresher Program*.

4.13.1.2. **(Added-USAFESUP)** IAW AFI 11-230, a non-USG instrument procedure must be reviewed by HQ USAFE-AFAFRICA/APF, have a table-top review conducted by HQ USAFE-AFAFRICA/A3TV, and be approved by the USAFE-AFAFRICA/A3.

4.13.1.2.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 delegates Non-USG Terminal Procedures (TERPS) approval authority to the USAFE-AFAFRICA/A3D and USAFE-AFAFRICA/A3O (only if the A3 or A3Ds are unavailable).

4.13.1.3. **(Added-USAFESUP)** Aircrew are responsible for conducting a thorough review of each approved instrument procedure (prior to flight) to determine that the procedure is compatible with the navigation equipment installed in their aircraft.

4.13.1.4. **(Added-USAFESUP)** It is the responsibility of the requesting aircrew to ensure a requested procedure has been reviewed and is posted to the ASRR and “Giant Report” prior to use. For updates on the status of a requested review, aircrew may contact HQ USAFE-AFAFRICA/APF or HQ USAFE-AFAFRICA/A3TV inside five working days of the mission date.

4.13.1.5. **(Added-USAFESUP)** If a dispatching agency does not make requests on behalf of the aircrew, the aircrew will use the following procedures when requesting a TERPS review.

4.13.1.5.1. **(Added-USAFESUP)** Aircrew will determine that a review is needed based on one or more of the following factors (reference the ASRR and “Giant Report”):

4.13.1.5.1.1. **(Added-USAFESUP)** No USG approach is published for the same procedure,

4.13.1.5.1.2. **(Added-USAFESUP)** A current review does not already exist; or

4.13.1.5.1.3. **(Added-USAFESUP)** A current review will expire during the mission (see paragraph **4.13.1.1. (USAFE)**).

4.13.1.5.2. **(Added-USAFESUP)** Once aircrew determine a review is required, submit a “USAFE FTIP Review Request” located on the HQ USAFE-AFAFRICA/APF website (<https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=s6925EC134C680FB5E044080020E329A9>) to the USAFE/TERPS organizational mailbox (usafete.terps@us.af.mil) no later than 7 business days prior to the mission start date. Short-notice requests (< 7 business days) will be accepted, but must be kept to an absolute minimum and may require additional justification to ensure review completion by the mission date. If problems occur with the on-line review request, contact HQ USAFE-AFAFRICA/APF (DSN: 314-480-7024; Comm: +49-(0)6371-47-7024).

4.13.1.6. **(Added-USAFESUP) Use of Jeppesen Procedures**

4.13.1.6.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of Jeppesen procedures without a TERPS review when within the National Airspace System (NAS), at specially-accredited locations, or at a non-specially-accredited locations having the exact same DOD published procedure available.

4.13.1.6.2. **(Added-USAFESUP)** In instances where the exact same Jeppesen reproduced specially-accredited and non-specialty-accredited procedure is also published by DoD, the pilot will conduct a comparison review of the Jeppesen reproduced procedure against the published DoD procedure chart and use the DoD procedure chart if significant differences are found (e.g., inbound course, frequencies, altitudes).

4.13.1.6.3. **(Added-USAFESUP)** For non-specially-accredited procedures, if the exact same DoD published procedure is not available, the pilot will obtain full TERPS/FTIP review of the Jeppesen procedure prior to use.

4.13.1.6.4. **(Added-USAFESUP)** HQ USAFE-AFAFRICA/APF publishes the most current “Special Accredited Host Nation Countries/Airports” list at the following

link: <https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=s6925EC134C680FB5E044080020E329A9>

4.13.1.6.5. **(Added-USAFESUP)** Pilots flying Jeppesen procedures must have completed Jeppesen training via the Instrument Refresher Course or from an approved Aircrew Training System (ATS) contract course and must check Jeppesen NOTAMS prior to the use of a procedure. Jeppesen NOTAMS can be found at: <http://www.jeppesen.com/company/alerts/alerts.jsp>.

4.13.1.6.6. **(Added-USAFESUP)** Units will report any discrepancies to HQ USAFE-AFAFRICA/APF (usafe.terps@us.af.mil) no later than 7 business days upon discovery.

4.13.1.7. **(Added-USAFESUP) Waiver of TERPS Review.** Request TERPS review waivers IAW paragraph **1.2.5.** .

4.13.2. **Electronic Equivalent and Non-Standard Formats.** Paper publications and documents are not required if replicated by electronic means and authorized by the MAJCOM. Formats which are rendered from a database or which do not maintain the original size, scale, format, or color may be authorized by the MAJCOM.

4.13.2.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes the use of electronic publications and documents IAW AFI 11-215, AFI 11-2MDSV3, MDS-specific AFTTPs, MAF EFB CONEMP, and local guidance.

4.13.3. **Required Publications.** Follow MAJCOM or MDS-specific guidance for required publications to be available in the aircraft or accessible to UAS operators (e.g., navigation charts, FIH, TPP) (T-1).

4.13.3. **(USAFESUP) Required Publications.** USAFE-AFAFRICA aircrews will follow AFI 11-215, AFI 11-2MDSV3, and local guidance for required publications.

4.13.4. **NOTAMS.** Obtain NOTAMS from the Defense Internet NOTAM Service (DINS) or the Defense Aeronautical Information Portal (DAIP) when it replaces DINS. If unavailable, obtain NOTAMS by contacting one of the installations listed in FLIP or the nearest Aeronautical Information Service (T-0).

4.13.4. **(USAFESUP) NOTAMS.** When directed by local Airfield Management offices, units will switch from DINS to the Defense Aeronautical Information Portal (DAIP) system (<https://www.daip.jcs.mil/daip/mobile/index>) to obtain NOTAMS.

4.13.4.1. If using non-USG products or databases, obtain the associated NOTAMs, alerts, and advisories from the respective country or agency (T-1).

4.13.4.1.1. **(Added-USAFESUP)** See paragraph **4.5.1.2.1.** .

4.13.5. **Navigation, Terrain, and Obstacle Databases.** Obtain databases through MAJCOM-authorized processes. Review aeronautical navigation database NOTAMS prior to flight (T-1).

4.13.5.1. **(Added-USAFESUP)** USAFE-AFAFRICA aircrews will obtain applicable Digital Aeronautical Information File (DAFIF) data, Obstruction Change File (OCF), and/or Digital Vertical Obstruction File (DVOF) for HN chart updating from the NGA Mission Planning website (<https://www.geointel.nga.mil/indexN.html>), Chart Amendment Document (CHAD), UK Chart Amendment Low Fly (CALF), Manual Boat (Low Flying Manual Italy), or HN-equivalent that provides chart update information.

4.13.5.1.1. **(Added-USAFESUP)** Unless otherwise stipulated in AFI 11-2MDSV3, all obstacles within 200 feet of the lowest planned altitude inside the planned low-level/VFR-navigation route/area will be updated and highlighted on applicable charts.

4.13.5.1.1.1. **(Added-USAFESUP)** When units utilize VVOD, OGVs (or equivalent) will develop standardized display settings to ensure necessary coverage and filtering.

4.13.5.1.2. **(Added-USAFESUP)** Charts will also be updated with current applicable HN low-level NOTAM info (see paragraph **4.5.1.2.1**. . **NOTE:** German CHUM (CHAD-GER) does not account for wind power plants (i.e., windmills) below 100m (approx. 328 feet). The location and elevation of these obstructions can usually be found in the Flight Safety NOTAMs for the applicable Flight Information Region (FIR). However, if a German military aerodrome owns the obstruction, the location and elevation of the obstruction may be found in the Flight Safety NOTAMs for that aerodrome.

4.13.5.2. **(Added-USAFESUP)** Aircrew will use HN Special Aeronautical Charts (SAC) as the primary source of planning and in-flight information for low altitude navigation where SAC coverage exists (SACs included both LFCs [1:500,000] and TFCs [1:250,000]). For all low-level missions executed in the USAFE-AFAFRICA AOR, a hard copy version of the LFC and/or TFC will be available during flight IAW AFI 11-2MDSV3 low-level navigation guidance. The hard-copy chart must be one of the following:

4.13.5.2.1. **(Added-USAFESUP)** An original or copy of a HN LFC/TFC; or

4.13.5.2.2. **(Added-USAFESUP)** A HN LFC/TFC printed copy from an AFI 11-2MDSV3 approved mission planning software or the NGA “Mission Planning” website (<https://www.geointel.nga.mil/indexN.html>).

4.13.5.3. **(Added-USAFESUP)** Aeronautical information and publications printed directly from USG and Non-USG sources will include a “Valid Through” date on all products used in-flight.

4.13.6. **Global Navigation Satellite System (GNSS) Predictive RAIM.** Predictive RAIM is mandatory. MAJCOMS will publish MDS-specific information for use of RAIM prediction procedures.

4.13.6. **(USAFESUP) Global Navigation Satellites System (GNSS) Predictive RAIM .** USAFE-AFAFRICA aircrews will use GNSS Predictive RAIM equipment IAW AFI 11-2MDSV3, MDS-specific AFTTPs, and local guidance.

4.13.6.1. **Precise Positioning Service (PPS) RAIM** . MAJCOMS may authorize use of civil (i.e. Standard Positioning Service (SPS)) RAIM prediction services if a PPS RAIM prediction tool is not available.

4.13.7. **(Added-USAFESUP) Aeronautical Information Publication (AIP)**. Aircrew will ensure familiarity with any HN MIL AIP restrictions/requirements when flying TERPs-reviewed HN approaches. Copies of current HN MIL AIP may be procured through the NGA Aeronautical Content Exploitation System (ACES) (<https://aerodata.nga.mil/AeroBrowser/>) or through HN liaisons

4.13.8. **(Added-USAFESUP) Air Refueling Publications**. USAFE-AFAFRICA aircrews will use the Joint Air Power Competence Center (JAPCC) website (<https://www.japcc.org/>) as the official source for the NATO ATP-3.3.4.2. and the National and Organizational Standards Related Documents (SRD).

4.14. Area Navigation (RNAV) and Required Navigation Performance (RNP).

4.14.1. Before flight, confirm the availability of the performance-based operations infrastructure for the intended route and procedures (T-0).

4.14.2. If a specified RNP level cannot be achieved, revise the route or delay departure until the appropriate RNP level can be assured (T-0).

4.14.3. The onboard navigation database should be current for the region of intended operation. MAJCOMs will publish guidance for continued enroute operations with a non-current navigation database. For terminal procedure guidance, see paragraph 7.3.2.

4.14.3.1. **(Added-USAFESUP)** Unless restricted by AFI 11-2MDSV3, TO guidance, or MDS-specific AFTTPs, USAFE-AFAFRICA aircrews may continue the use of a non-current database until the opportunity for update is available.

4.14.4. Ensure planned waypoints and procedures (departure, arrival, approach) are included in the current onboard navigation database prior to flight (T-0).

4.15. IFR Flight.

4.15.1. Fly USAF fixed-wing aircraft under IFR to the maximum extent practical. Pilots shall fly under IFR if:

4.15.1.1. Weather conditions do not permit VFR flight (T-0);

4.15.1.2. Airspace rules require IFR flight (T-0);

4.15.1.2.1. **(Added-USAFESUP)** Aircraft flying in the UK will consider “Deconfliction Service” to be equivalent to IFR (reference UK MIL AIP).

4.15.1.3. Operating in excess of 180 knots true airspeed (KTAS) within (not simply crossing) federal airways (T-1); or,

4.15.1.4. Operating fixed-wing aircraft at night, unless the mission cannot be flown under IFR.

4.15.1.4.1. **(Added-USAFESUP)** HN airspace requirements requiring aircrew to fly VFR during night low-level training is considered a mission requirement and is therefore included in paragraph **4.15.1.4**.

4.15.2. **IFR Destination Filing Requirements.** Flowcharts are available in [Attachment 2](#) (Fixed-Wing) or [Attachment 3](#) (Helicopter).

4.15.2.1. **Required Weather .**

4.15.2.1.1. **Fixed-Wing and Helicopter.** Prevailing weather for the estimated time of arrival (ETA) 1 hour at destination must be at or above the lowest compatible published landing minimums (TEMPO conditions may be below published minimums at ETA 1 hour) (T-1). Helicopters may reduce visibility by one-half, but no lower than 1/4 SM PV or 1,200 ft RVR (T-1). See [paragraph 4.15.3](#) for alternate requirements (T-1). **Exception:** MAJCOMs may authorize filing to a destination with weather below the lowest compatible landing minimums, but must establish supplemental recovery procedures such as the use of two or more alternate airports, additional holding fuel, etc.

4.15.2.1.1.1. For a straight-in or sidestep approach, the forecast weather must meet required visibility minimums (T-1).

4.15.2.1.1.1.1. **(Added-USAFESUP) CAF Fixed-Wing Only.** Both the forecast ceiling and visibility will be at or above their applicable Pilot Weather Categories (PWC) minimums see [Table A5.1](#) .

4.15.2.1.1.2. For a circling approach, the forecast weather must meet both the ceiling and prevailing visibility minimums (T-1).

4.15.2.1.1.3. For an RNAV/RNP/GNSS approach based on SBAS and annotated with the “W” symbol, weather must meet Lateral Navigation (LNAV) minimums (T-1).

4.15.2.1.1.4. **(Added-USAFESUP)** With OG/CC (or equivalent) or designated representative approval, aircrew may file to a destination whose forecast (not including TEMPO conditions) is lower than prescribed in paragraph [4.15.2.1.1.](#), but two alternates are required IAW paragraph [4.15.3.4](#).

4.15.2.1.1.5. **(Added-USAFESUP)** Aircrew may file to a destination whose forecast includes TEMPO changes in ceiling and/or visibility that are lower than prescribed in paragraph [4.15.2.1.1.](#), but one alternate is required IAW paragraph [4.15.3.4](#).

4.15.2.1.2. **UAS.** In the absence of MAJCOM UAS weather guidance, follow manned fixed-wing and helicopter weather requirements (T-1).

4.15.2.2. **Available Instrument Approach.**

4.15.2.2.1. Pilots must file IFR to a destination or an alternate with a compatible instrument approach (T-1). If there is no compatible published approach at the destination, pilots may proceed to a point served by a published approach or to an IFR point where forecast weather at ETA 1 hour allows the pilot to continue VFR to the destination.

4.15.3. **Requiring an IFR Alternate.**

4.15.3.1. **Weather.** An alternate is required when the worst weather at destination, to include TEMPO conditions, at the ETA 1 hour is less than:

- 4.15.3.1.1. **Fixed-Wing Aircraft.** A ceiling of 2,000 ft or a visibility of 3 SM (T-0).
- 4.15.3.1.2. **Helicopters.** A ceiling of 1,000 ft. (or 400 ft above the lowest compatible approach minimums, whichever is higher) or a visibility of 2 SM (T-0).
- 4.15.3.1.3. **UAS.** MAJCOMs will determine alternate airfield policies for UAS.
 - 4.15.3.1.3.1. **(Added-USAFESUP)** UASs shall utilize alternate airfield procedures, when available, IAW AFI 11-2MDSV3.
- 4.15.3.1.4. **(Added-USAFESUP) Temporary (TEMPO) Conditions.** See paragraph [4.15.2.1.1.5.](#) for filing to a destination with TEMPO conditions below the minimum filing weather.
- 4.15.3.2. **Other Conditions Requiring an Alternate:**
 - 4.15.3.2.1. All compatible approaches require radar (T-1);
 - 4.15.3.2.2. Required navigational aids (NAVAID) will be unmonitored (T-1);
 - 4.15.3.2.3. The destination has no weather reporting capability (T-1);
 - 4.15.3.2.4. The airfield's lowest compatible approach weather minimums are greater than or equal to a 1,500 ft. ceiling or 3 SM visibility (T-1); or,
 - 4.15.3.2.5. GPS is the only available NAVAID (T-1).
 - 4.15.3.2.6. **(Added-USAFESUP)** USAFE-AFAFRICA aircrews will designate en-route alternates for use in the event of unsuccessful Air-to-Air Refueling or Helicopter Air-to-Air Refueling operations on all flights where air refueling is required to successfully complete the mission.
- 4.15.3.3. **Exceptions:**
 - 4.15.3.3.1. **Remote or Island Destinations .** MAJCOMs may authorize holding for a specified time in lieu of filing an alternate for remote or island destinations. MAJCOMs will define remote or island destinations and prescribe weather criteria and recovery procedures.
 - 4.15.3.3.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes holding in-lieu of an alternate for remote or island destinations IAW AFI 11-2MDSV3 guidance. If no guidance exists, request approvals from USAFE-AFAFRICA/A3 via paragraph [1.2.5.](#) .
 - 4.15.3.3.1.2. **(Added-USAFESUP) Keflavik Flying Operations Without Designating an Alternate (Fighter Only).** USAFE-AFAFRICA/A3 delegates approval to the Exercise Mission Directors or Squadron Operations Supervisors for local Keflavik flying operations. Aircrews will use the following restrictions/requirements:
 - 4.15.3.3.1.2.1. **(Added-USAFESUP)** Observation/forecast must be a minimum of 800 ft. ceiling and 3 SM (5000 m) visibility and be forecasted to remain so for at least 1 hour after the ETA.
 - 4.15.3.3.1.2.1.1. **(Added-USAFESUP)** If a tanker (KC-135/KC-10) airborne under the OPCON of the Mission Director, Squadron Operations

Supervisor, or on 30 minute alert) is not available, fighters will arrive overhead with reduced alternate fuel to allow at least a 30-minute loiter time.

4.15.3.3.1.2.2. **(Added-USAFESUP)** If the observed/forecast weather is between 800 ft. ceiling/3 SM (5000 m) visibility and 500 ft. ceiling/1.5 SM (2400 m) visibility, an alternate and full alternate fuel are required. If these same forecast conditions are intermittent or temporary, the reduced alternate fuel is permitted which will allow either a 30-minute loiter or rendezvous with the tanker, whichever is higher.

4.15.3.3.1.2.3. **(Added-USAFESUP)** A precision approach to an active runway must be available when the observed/forecast weather is less than 800 ft. ceiling/3 SM (5000 m) visibility.

4.15.3.3.1.2.4. **(Added-USAFESUP)** Takeoffs are prohibited on routine training missions if the terminal area forecast or observation is less than 500 ft. ceiling or 1.5 SM (2400 m) visibility. An intermittent or temporary forecast of less than 500 ft. ceiling or 1.5 SM (2400 m) visibility requires an alternate and full alternate fuel.

4.15.3.3.2. Alternate requirement may be cancelled enroute if weather conditions improve at destination to exceed [paragraph 4.15.3.1](#).

4.15.3.4. **Selecting an Alternate.** The worst alternate forecast weather conditions for ETA 1 hour, to include TEMPO conditions (except those caused by thunderstorms, rain showers, or snow showers) will meet or exceed:

4.15.3.4.1. **Fixed-Wing Aircraft.** A ceiling of 1000 ft., or 500 ft. above the lowest compatible minimum, whichever is higher; and a visibility of 2 SM or 1 SM above the lowest compatible minimum, whichever is higher (T-0).

4.15.3.4.1.1. **(Added-USAFESUP) CAF Fixed-Wing Only:** PWC minimums will not be used to determine if the weather is suitable to declare an airfield as an alternate. PWCs should be factored into RM assessments when alternate weather is at/near PWC minimums.

4.15.3.4.2. **Helicopters.** A ceiling of at least 200 ft. above, and a visibility of at least 1 SM above the lowest compatible published landing minimum (T-0).

4.15.3.4.3. **UAS.** MAJCOMs will establish UAS alternate airfield policies.

4.15.3.4.3.1. **(Added-USAFESUP)** UASs shall utilize alternate airfield procedures, when available, IAW AFI 11-2MDSV3.

4.15.3.4.4. **Alternate without a Published or Compatible Instrument Approach Procedure.** Forecast weather for the ETA (± 1 hour) must permit a VFR descent from a published IFR altitude to a VFR approach and landing (T-0). Conditions in para 4.15.3.5. do not apply when utilizing this option.

4.15.3.4.4.1. **(Added-USAFESUP)** To determine minimum IFR altitude at alternate airfields, aircrew will use the highest Minimum Safe Altitude (MSA) as published on either the USG or TERPs-reviewed non-USG IAPs. **(NOTE:**

Aircrew will ensure they reference the TERPs review letter for any MSA adjustment prior to referencing the non-USG IAP). An IAP may be used to determine the MSA regardless of the compatibility of the aircraft. If an MSA is not published (or an IAP is not available), aircrew will use the highest ORTCA (found on the OCONUS Low Enroute Chart) within 10 NMs of the field. Reference paragraph **6.2**.

4.15.3.5. **Conditions Disqualifying an Alternate.** The disqualifying conditions below may be listed throughout various sources (e.g., TPP, NOTAMs, IFR Supplement):

4.15.3.5.1. All compatible approaches require radar (T-1).

4.15.3.5.1.1. **(Added-USAFESUP)** If the forecast weather for the ETA (± 1 hour) at an alternate does not permit a VFR descent from the minimum IFR altitude, USAFE-AFAFRICA/A3 authorizes compatible approaches requiring radar designated as alternates IAW the following guidance:

4.15.3.5.1.1.1. **(Added-USAFESUP)** Approval is granted to common divert airfields as defined by local guidance (e.g., IFG) when all compatible approaches require radar. All other airfields require USAFE-AFAFRICA/A3 approval.

4.15.3.5.1.1.2. **(Added-USAFESUP)** Aircrew must ensure familiarity with applicable lost communication procedures for the approaches being flown to include any specific HN requirements.

4.15.3.5.1.1.3. **(Added-USAFESUP)** To the maximum extent practical, at non-US-controlled fields, a Supervisor of Flying (SOF) or similar MDS liaison will be available (with access to the necessary radios) to communicate with USAF aircrew and liaise with HN ATC personnel anytime USAF aircraft are airborne.

4.15.3.5.2. All compatible approaches require an unmonitored NAVAID (T-1).

4.15.3.5.3. The airfield does not have a weather reporting service (T-1).

4.15.3.5.4. “**▲** NA” (Alternate Not Authorized) on all compatible approaches (T-1).

4.15.3.5.5. Any note disqualifying the airfield or all compatible approaches in the IFR Alternate Minimums section **▲** (T-1).

4.15.3.5.6. GPS is the only available NAVAID (T-1).

4.16. VFR Flight.

4.16.1. Weather. Do not operate under VFR when the flight visibility is less than, or at a distance from clouds that is less than the criteria listed in **Table 6.1** or **6.2**. (T-0).

4.16.2. Fly fixed-wing aircraft under VFR only when required for mission accomplishment. Mission examples include: operational necessity, host-nation requirements, training, proficiency or evaluation sorties, aircraft equipment that precludes IFR flight, and ATC or NAVAID limitations that preclude IFR flight. All aircraft comply with the AFMAN 11-217 series and the following:

4.16.2.1. Ensure VFR operations are authorized and properly planned (T-2).

4.16.2.2. Utilize radar advisory and monitoring or control services when practical to ensure flight following by any available means (e.g. FSS or C2 agency) (T-2).

4.16.2.2.1. **(Added-USAFESUP)** Aircrew will use HN VFR radar services to the max extent practical, but are not prohibited from VFR training (to include low-level navigation) if unable to secure any type of flight following.

4.16.2.3. When conditions (weather, airspace, etc.) prevent completing the mission under VFR, alter route and continue under VFR until reaching the destination, obtain an IFR clearance, or land at a suitable location (T-0).

4.16.2.4. When conducting tactical operations, fly under VFR unless compliance with VFR degrades mission accomplishment (T-2).

4.16.2.5. **Special VFR (SVFR)** . Fixed-wing aircraft shall not fly under SVFR (T-1). MAJCOMs may allow helicopter aircrews to fly under SVFR IAW 14 CFR §91.157 (within the NAS) or appropriate host-nation guidance.

4.16.2.5.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes rotary-wing operations under SVFR conditions IAW AFI 11-2MDSV3, local and HN guidance, and MDS-specific AFTTPs.

4.16.2.6. **VFR Over-the-Top** . When operating VFR above a ceiling, follow guidance in AFMAN 11-217 series.

4.16.2.7. **IFR "VFR-on-Top"** . Pilots may request "VFR on Top" operations (IAW AFMAN 11-217 series) when the mission dictates.

4.17. Flight Plans.

4.17.1. Ensure a flight plan is filed IAW MAJCOM guidance for any flight (T-1). By filing a flight plan, the PIC certifies:

4.17.1.1. The flight was properly ordered, authorized, and released IAW AFI 11-401;

4.17.1.2. The flight will be conducted IAW all governing directives (see [paragraph 1.2](#));

4.17.1.3. Compliance with paragraph 4.5;

4.17.1.4. The flight plan has been reviewed for completeness and accuracy;

4.17.1.5. Responsibility for the safety of the aircraft, the formation, and its occupants;

4.17.1.6. The flight complies with Air Defense Identification Zone (ADIZ) restrictions and SUA or MTR scheduling and coordination procedures specified in FLIP and NOTAMs.

4.17.1.7. **(Added-USAFESUP)** Compliance with paragraph [4.17.5.](#)

4.17.2. **Passenger Manifests and Crew Lists.** List passengers on a DD Form 2131, *Passenger Manifest*, or a MAJCOM-approved form (T-1). File the manifest and crew list with the flight plan, the passenger service facility, or other responsible agency (T-0). Notify C2 prior to departure if there is a passenger manifest (or crew list) change (T-2). When able, process any changes with the original processing facility or a responsible agency.

4.17.2. **(USAFESUP) Passenger Manifests and Crew Lists.** Aircrew may use forms as prescribed in AFI 11-2MDSV3, local guidance, and computer generated passenger manifests provided by the passenger terminal function at DoD installations.

4.17.3. **Flight Plan Changes.** The format for making changes to a flight plan is printed on the back of the DoD IFR Supplement. Ensure ATC and/or destination is aware of changes to prevent erroneous Search and Rescue (SAR) or unannounced arrival (T-0). Before takeoff or while airborne, changes may be made to the original filed flight plan without re-filing provided:

4.17.3.1. The change does not penetrate an ADIZ;

4.17.3.2. The controlling ATC agency approves the change for an IFR flight; or,

4.17.3.3. The change complies with applicable host-nation rules.

4.17.4. **Closing the Flight Plan.** When landing at a tower-controlled airfield in the NAS, an IFR flight plan should close automatically. When landing at a military airfield, base operations will close VFR/DVFR flight plans. When landing at a civilian airfield without a tower or arriving at a civilian airfield VFR/DVFR, the pilot is responsible for ensuring that flight plans are closed, either by contacting an FSS, the originating military base operations, or through an ATC facility (T-0).

4.17.5. **(Added-USAFESUP) Flight Plan Requirements.** IAW AFI 11-401 Attachment 4, aircrew may use the AF Form 4327, *ARMS Flight Authorization*, instead of DD Form 1801, *DoD International Flight Plan* for local area flights. Additionally, aircrew may use forms as prescribed in AFI 11-2MDSV3, local, and HN guidance.

4.17.5.1. **(Added-USAFESUP)** The PIC will sign the aircraft commander's signature block on the AF Form 4327 and/or DD Form 1801 (as applicable). If the pilot does not possess approval authority, the SQ/CC, or designated representative, will sign. A pen and ink signature is not required for electronically generated/transmitted flight plans. During exercises or contingencies, the SQ/CC or designated representative may be the approval authority for pilots under the commander's control.

4.18. Fuel Requirements.

4.18.1. Ensure sufficient fuel is available onboard the aircraft to comply with the requirements of this instruction and safely conduct the flight (T-0). Use MAJCOM-approved fuel efficiency techniques and procedures to the maximum extent practical (T-2). Before takeoff or immediately after in-flight refueling, the aircraft must have enough usable fuel to complete the flight:

4.18.1. **(USAFESUP)** Aircrew will use the fuel-efficiency techniques and procedures as published in AFI 11-2MDSV3, TO and local guidance, and MDS-specific AFTTPs.

4.18.1.1. To a final landing, either at the destination airport or alternate airport (if required), plus fuel reserves (T-0); or,

4.18.1.2. Between Air Refueling Control Points (ARCPs) and then to land at the destination (or a recovery base, if refueling is not successful), plus the fuel reserve (T-2).

4.18.1.2.1. Helicopters may fly between ARCPs without required fuel to destination or recovery base in the event of an unsuccessful air refueling.

4.18.2. **Alternate Airport Fuel Requirements.** When an alternate airport is required, fuel required for an approach and missed approach at the intended destination must be included in the total flight plan fuel if visibility-only weather criteria is used at the destination (T-1). Fuel required for a missed approach is not required if both ceiling and visibility criteria are used (T-1).

4.18.2.1. **(Added-USAFESUP)** Fighter aircraft fuel requirements must include the fuel needed for an approach and missed approach at the original destination, even if ceiling and visibility criteria are used to determine suitability of the original destination.

4.18.3. **Fuel Reserve.** Ensure the aircraft is carrying enough usable fuel on each flight to increase the total planned flight time between refueling points by 10 percent (up to a maximum of 45 minutes for fixed-wing or 30 minutes for helicopters) or 20 minutes, whichever is greater (T-0). Compute fuel reserves using MAJCOM-defined consumption rates for normal cruising speeds or the following:

4.18.3.1. For reciprocating engine aircraft and helicopters, use fuel consumption rates for normal cruising altitudes (T-1).

4.18.3.2. For turbine-powered aircraft use fuel consumption rates that provide best endurance at 10,000 ft. MSL (T-1).

4.18.3.3. If the MAJCOM authorizes holding (instead of an alternate airport) for a remote or island destination, do not consider the prescribed holding time as part of the total planned flight time or fuel reserve (T-1).

4.18.3.3. **(USAFESUP)** Reference paragraph [4.15.3.3.1.1](#). for guidance on holding in lieu of alternate for remote/island destinations.

4.18.4. **Equal Time Point (ETP).** In the absence of MDS-specific guidance, multi-engine aircraft without the ability to in-flight refuel, operating for extended periods over large bodies of water or desolate land areas (outside gliding distance to a suitable landing site) shall calculate and plot on a navigational chart an ETP to a suitable alternate for that mission leg. Contingency fuel requirements shall also be planned (e.g., engine-out depressurized flight from an ETP to a suitable landing site) (T-1).

4.18.4. **(USAFESUP) Equal Time Point (ETP).** ETP guidance does not apply to tactical operations conducted over open water where fuel planning for a return to the primary recovery base or recovery at an alternate (if necessary) is already factored into the mission.

4.18.4.1. **(Added-USAFESUP) CAF.** For ACC/AOS-controlled flight (e.g., Coronet), the preflight planning and products produced by the applicable AOS suffice for the requirements listed above. When not under AOS control, follow MDS and local standards for maintaining awareness of divert options while on extended-duration flights (also see paragraph [4.15.3.2.6](#)). Reference AFMAN 11-217V3, *Supplemental Flight Information*, for further information on calculating ETPs.

4.19. Preflight Briefings.

4.19.1. Prior to flight, ensure each crewmember and passenger is briefed on items affecting safety or mission completion (T-0). At a minimum, briefings will include:

4.19.1.1. Emergency signals and procedures (T-0);

4.19.1.2. Aircrew and passenger flight equipment/systems usage information to include the location and use of emergency exits, parachutes, oxygen, communications systems, and survival equipment (T-0); and,

4.19.1.3. Safety precautions and restrictions to include Foreign Object Damage (FOD) hazards and electronic device prohibitions (T-1).

Chapter 5

DEPARTURE

5.1. Weather.

5.1.1. **Minimum Takeoff Weather.** Takeoffs are prohibited when existing weather is below landing minimums (T-2). MAJCOMs will publish alternative takeoff minimums and recovery procedures when takeoff weather is lower than published landing minimums. In all cases, takeoff visibility must be 600 RVR (180 meters) or greater (T-1).

5.1.1.1. **Fixed-wing RVR Requirements.** Takeoff with weather below 1600 RVR is not authorized unless the runway has operating centerline lights, visible runway centerline markings, and two operative RVR reporting systems (T-1). All RVR readings must meet or exceed minimum authorized values for departure (T-1).

5.1.1.2. **(Added-USAFESUP) CAF Fixed-Wing Only .** PWCs shall be used to determine landing minimums for takeoff weather. The OG/CC (or equivalent) may authorize aircrew to take off in weather below their PWC (but not lower than approach minimums) when operational requirements dictate.

5.1.1.3. **(Added-USAFESUP) MAF, UAS and Rotary Wing Aircraft.** USAFE-AFAFRICA aircrews will follow AFI 11-2MDSV3 guidance for alternative takeoff minimums and recovery procedures when weather is below published landing minimums.

5.1.1.4. **(Added-USAFESUP)** If AFI11-2MDSV3 guidance does not cover specific alternative takeoff minimums and recovery procedures, takeoff with weather below landing minimums is not allowed without an approved waiver to paragraph **5.1.1.**

5.1.2. **Freezing Precipitation.** Do not takeoff with ice, snow, frost, or other contamination adhering to the wings, control surfaces, propellers, engine inlets, or other critical surfaces of the aircraft, unless authorized by the flight manual (T-2).

5.1.2.1. A thin coating of frost is permitted on the fuselage, provided the lettering and/or paint lines are visible.

5.1.2.2. Light frost (up to 1/8 inch thick) caused by super-cooled fuel is permitted on the lower wing surface (i.e., below the fuel tank area) if the fuselage and all other control surfaces are free of icing. If deicing is required on any other aircraft surface, the under wing frost shall also be removed (T-2).

5.1.2.3. Information on the removal and prevention of frozen precipitation is contained in AF T.O. 42C-1-2, *Anti-Icing, De-Icing and Defrosting of Parked Aircraft*.

5.1.2.3.1. **(Added-USAFESUP)** For further guidance, reference the most current HQ USAFE-AFAFRICA Cold Weather Procedures/Holdover Tables FCIF posted on the HQ USAFE-AFAFRICA/A3TV SharePoint ICE page (https://ice.usafe.af.mil/sites/A3/A3T/A3TV_External/default.aspx).

5.1.3. **Takeoff Near Hazardous Weather.** Do not takeoff where thunderstorms or other hazardous conditions are producing hail, strong winds, gust fronts, heavy rain, lightning, wind shear, or microbursts (T-2).

5.2. Turns after Takeoff. Do not turn after a takeoff until at least 400 ft. above the Departure End of the Runway (DER) elevation, at a safe airspeed, and past the end of the runway (if visible) unless specifically cleared by the controlling agency, required by a published procedure, or when executing a closed pattern (T-0).

5.2.1. When turning on departure from an aerodrome with a temperature of 0° C or less, aircrew will temperature correct all minimum specified turn altitudes (including the 400 ft. above DER) utilizing the temperature correction chart in the FIH (T-1).

5.3. VFR Climb Performance. Unless specifically authorized, fixed-wing multi-engine aircraft will not depart a location under VFR without ensuring that they can vertically clear published IFR departure procedure restrictions along the planned departure route with one engine inoperative (OEI) (T-2).

5.4. IFR Climb Performance. Unless otherwise published and charted with “ATC” designation, all climb gradients must be assumed to be obstacle based. Only MAJCOM-authorized procedures for climb performance assessment may be used (vice locally developed procedures). MAJCOMs may authorize SDPs. Aircrew must be trained before use of any SDP (T-1).

5.4.1. **Low Close-in Obstacles.** Ensure the aircraft can vertically clear applicable published low close-in obstacles along the planned ground track (T-1). Low close-in obstacles may be listed in the Obstacle Departure Procedures ▼ (ODP) section, NOTAMs, or charted on the published procedure. Published or ATC climb gradients do not account for low close-in obstacles in their climb gradient calculations; therefore, low close-in obstacle clearance is not assured when complying with the published or ATC climb gradient.

5.4.2. **ATC Climb Gradient.** Aircraft are required to meet ATC climb gradients with all engines operating (AEO) (T-0). If the aircraft does not have the computed performance to meet the charted ATC climb gradient, coordinate with ATC prior to flight.

5.4.3. Obstacle Climb Gradient.

5.4.3.1. Ensure the aircraft can comply with the respective obstacle climb gradients below:

5.4.3.1.1. Ensure the aircraft can meet or exceed 200 ft/NM or the published climb gradient, whichever is higher, to an appropriate IFR altitude (T-0).

5.4.3.1.2. **Multi-Engine Fixed-Wing Aircraft.** With OEI, ensure the aircraft can meet 200 ft/NM or the published climb gradient, whichever is higher, to an appropriate IFR altitude (T-0).

5.4.3.1.2.1. If unable to meet published obstacle climb gradient OEI, and operationally necessary, the MAJCOM/A3 may authorize subtraction of up to 48’/NM from the required obstacle climb gradient. This subtraction does not apply to SDPs.

5.4.3.1.2.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes subtractions IAW paragraph **5.4.3.1.2.1.** for the following “operationally necessary” missions:

5.4.3.1.2.1.1.1. **(Added-USAFESUP)** Training conducted as part of any Building Partnership (BP) deployment/mission or Joint Airborne/Air Transportability Training (JA/ATT).

5.4.3.1.2.1.1.2. **(Added-USAFESUP)** HHQ tasked or Contingency missions.

5.4.3.1.2.1.1.3. **(Added-USAFESUP)** Urgent Aeromedical Evacuation missions.

5.4.3.2. If unable to meet the required obstacle climb gradient, consider aircraft, mission, or environmental changes such as reducing aircraft gross weight or delaying for more favorable weather conditions. If still unable to comply with the required obstacle climb gradient, an IFR departure is not authorized (T-0).

5.4.3.2.1. If the mission justifies the increased risk, MAJCOM/A3 may authorize a departure in VMC regardless of climb gradient compliance. At MAJCOM/A3 discretion, waiver authority may be further delegated to no lower than the operations group commander (or equivalent).

5.4.3.2.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 delegates waiver authority to the OG/CC, AOC/CC, or equivalent for IFR departures in VMC when unable to meet climb gradient compliance for HHQ tasked, Contingency, and Urgent Aeromedical Evacuation missions only. Prior to departure, aircrew will ensure all factor obstacles and associated avoidance plans are briefed and understood.

5.4.4. **(Added-USAFESUP) Special Departure Procedures (SDP).** USAFE-AFAFRICA/A3 authorizes SDPs in lieu of meeting the TERPS minimum climb gradient requirement with one engine inoperative IAW AFI11-2MDSV3 for “operationally necessary” missions listed in paragraphs [5.4.3.1.2.1.1.1.](#) thru [5.4.3.1.2.1.1.3.](#)

5.4.4.1. **(Added-USAFESUP)** USAFE-AFAFRICA certification is satisfied by successful completion of a unit training program IAW AFI 11-2MDSV1 and local guidance.

5.5. IFR Departure Methods. Obstacle Departure Procedures (ODPs) and/or Standard Instrument Departures (SIDs) should be flown to the maximum extent possible.

5.5.1. Depart IFR using one, or a combination of, the methods listed below (T-1). If the airport does not have one of these IFR departure methods, an IFR departure is not authorized (T-1).

5.5.1.1. Diverse Departure (ICAO - Omnidirectional Departure).

5.5.1.2. Obstacle Departure Procedure ▼ (ODP).

5.5.1.3. Standard Instrument Departure (SID).

5.5.1.4. Specific ATC Departure Instructions.

5.5.1.5. Non-Standard Takeoff Minimums.

5.5.1.6. MAJCOM Certified Procedure.

5.5.2. The following information applies to the departure methods listed above:

5.5.2.1. **Diverse Departure (ICAO-Omnidirectional Departure)**. A diverse departure is an IFR departure procedure used at an airport that has at least one published approach but lacks non-standard takeoff minimums and/or IFR departure procedures. Track runway centerline to 400 ft. above the DER elevation before turning on course. Ensure aircraft will vertically clear applicable low close-in obstacles published in NOTAMs or the Takeoff Minima and ODPs ▼ before turning on course. Diverse departures are not authorized when an ODP, obstacle climb gradient, or non-standard takeoff weather minimums are published for the planned departure runway (T-0).

5.5.2.1.1. **Sector Diverse Departure** . Fly “sector” diverse departures as published (T-0).

5.5.2.2. **Obstacle Departure Procedures ▼ (ODP)** . Also known as a “trouble T”, ▼ ODP refers to textual or graphical instructions to ensure departure obstacle clearance. Notify ATC (or other traffic) when planning to depart via an ODP (T-0). ODPs also include:

5.5.2.2.1. **Visual Climb Over Airport (VCOA)** . Do not fly any VCOA procedure until completion of MAJCOM-specified training (T-1). The weather must be at or above the minimums published for the VCOA (T-0). Unless otherwise published, consider VCOA visibility requirements as the “remain within” distance and do not exceed this radius from the center of the airfield while climbing to the specified altitude (T-1). Notify ATC (or other traffic) when planning to depart via the VCOA (T-0). Except for MAJCOM-approved NVD trained and equipped aircrew, do not fly VCOA procedures at night (T-1).

5.5.2.2.1.1. **(Added-USAFESUP) VCOA Training**. Aircrew will accomplish and document VCOA training IAW AFI 11-2MDSV1 and V3. If no guidance exists accomplish VCOA training IAW the following guidance.

5.5.2.2.1.1.1. **(Added-USAFESUP)** If not received as part of local Theater Indoctrination (TI) training (see AFI 11-202V1 and applicable supplements) pilots will review the HQ USAFE-AFAFRICA VCOA training presentation located on the HQ USAFE-AFAFRICA/A3TV Information Collaborative Environment (ICE) page (https://ice.usafe.af.mil/sites/A3/A3T/A3TV_External/default.aspx) prior to their first flight using VCOA procedures. Units will document the training with the ARMS event VC10.

5.5.2.2.2. **Reduced Takeoff Runway Length (RTRL)** . When using a published RTRL procedure, ensure the aircraft can attain a safe liftoff speed prior to the distance remaining specified in the procedure (T-0). Aircrew will only use RTRL procedures if published as an ODP in FLIP (T-1). MAJCOM-approved RTRL procedures will be considered a published ODP.

5.5.2.2.2.1. **(Added-USAFESUP)** Aircrew will request RTRL ODPs IAW TERPS review request procedures (see paragraph 4.13.1.2. .

5.5.2.3. Standard Instrument Departures (SID). Follow SID procedures as published (T-0). Comply with applicable notes, low close-in obstacles, and climb gradients on the SID (T-0). SIDs without a published climb gradient have been assessed at 200 ft/NM. If the SID does not have published low close-in obstacles but has an ODP annotated, refer to the corresponding runway ODP ▼ for potential low close-in obstacles. Reference all published low close-in obstacle locations to ensure compliance.

5.5.2.3.1. Retrieve RNAV/RNP/GNSS procedures in their entirety by procedure name from a current navigation database and compare against approved publications (T-0).

5.5.2.4. Specific ATC Departure Instructions. ATC instructions refer to navigational guidance (e.g. heading, routing, and altitude) issued with a departure clearance.

5.5.2.4.1. If the departure runway has multiple published climb gradients, pilots must meet or exceed the highest gradient when departing via ATC instructions (T-0). This does not apply to a charted Diverse Vector Area (DVA).

5.5.2.4.2. Diverse Vector Area (DVA) . A DVA may be established to allow radar vectors in lieu of an ODP. The ▼ symbol may denote the existence of a charted DVA within FLIP. Headings will be as assigned by ATC and climb gradients, when applicable, will be published.

5.5.2.4.2.1. If a DVA is charted, only use the climb gradient associated with the DVA.

5.5.2.4.3. Outside the NAS in a non-radar environment, confirm minimum climb gradient for departure sector (T-0). The obstacle-based climb gradient is not standardized at 200 ft/NM outside the NAS.

5.5.2.5. Non-Standard Takeoff Minimums. Departures using non-standard takeoff minimums (ceiling and visibility) must ensure the aircraft is at or above the published ceiling by the end of the runway (OEI for multi-engine fixed-wing aircraft), then continue climbing at 200'/NM or published climb gradient associated with the non-standard takeoff minimums (or IAW [5.4.3.1.2.1](#)) to a minimum IFR altitude (T-1). Non-standard takeoff minimums shall not be used to “see-and-avoid” obstacles (T-1).

5.5.2.5.1. If the ODP has a non-standard takeoff minimum with a published climb gradient, cross the departure end of runway at the published ceiling then comply with the published climb gradient (T-1).

5.5.2.6. MAJCOM Certified Procedure. In Restricted Areas or during contingency operations, MAJCOM/A3s may develop and authorize departure procedures for their aircraft at specific locations if no other procedure can be developed IAW AFI 11-230. Complete MAJCOM-specific training before using such procedures (T-1).

Chapter 6

ENROUTE

6.1. Airspace Clearance Authority.

6.1.1. **Uncontrolled Airspace.** The PIC is the clearance authority for IFR or VFR flight in uncontrolled airspace (T-0).

6.1.1. **(USAFESUP) Uncontrolled Airspace.** If the PIC does not possess an instrument qualification, the clearance authority for IFR flight in uncontrolled airspace is the supervising IP (see paragraph 4.2 (USAFE)). Units will provide guidance on upgrading aircrew actions if the supervising IP becomes unavailable during flight.

6.1.2. Controlled Airspace.

6.1.2.1. **VFR.** The PIC is the clearance authority for VFR flight (if allowed) in controlled airspace. If cancelling an IFR clearance, request flight following to the maximum extent possible (T-2). VFR flight following is not required if already in contact with the destination's control tower.

6.1.2.1.1. **(Added-USAFESUP)** Aircrew will use HN VFR radar services to the max extent practical, but are not prohibited from VFR training (to include low-level navigation) if unable to secure any type of flight following.

6.1.2.2. **IFR.** Pilots shall obtain ATC clearance before an IFR departure (or as soon as practicable after departure while maintaining VMC) or before entering controlled airspace (T-0).

6.2. Minimum Aircraft Altitude.

6.2.1. **VFR.** In the NAS, fly appropriate VFR hemispheric altitudes when higher than 3,000 ft above ground level (AGL), unless authorized by ATC (T-0). Do not apply these altitudes when turning or holding in a holding pattern of 2 minutes or less (T-0). Outside the NAS, fly altitudes or flight levels as specified in FLIP (T-0).

6.2.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA aircrews will compute an MSA IAW AFI 11-2MDSV3 for all VFR and low-level operations. If no guidance exists, aircrews will compute an MSA IAW AFMAN 11-217V2.

6.2.2. **IFR.** Except when necessary for takeoff, landing, or when being vectored by ATC, do not fly lower than:

6.2.2.1. On Airways, no lower than any published minimum for the airway (T-0).

6.2.2.2. Off Airways, no lower than:

6.2.2.2.1. The Off Route Obstacle Clearance Altitude (OROCA) (T-1);

6.2.2.2.2. The Off Route Terrain Clearance Altitude (ORTCA) (T-1); or,

6.2.2.2.3. An altitude that provides at least 1,000 ft. of clearance above all obstacles within 4 NMs of the course to be flown in non-mountainous terrain, or 2,000 ft. in mountainous terrain (T-0).

6.2.2.2.3.1. **(Added-USAFESUP)** The calculation in paragraph 6.2.2.2.3. will be used to determine Route Abort Altitude (RAA) for all low-level training in the USAFE-AFAFRICA AOR. Aircrew will ensure the RAA encompasses the entire area anticipated for low-level training regardless of black line routing. Reference AFI 11-2MDSV3 for more information.

6.2.2.2.3.2. **(Added-USAFESUP)** In the UK aircrew may assume clearance to fly other than direct course anytime aircraft are under “Traffic Service” or “Deconfliction Service” (execute IAW UK AIP). “SUA” also includes all HN-defined low-level operating airspace/routes as defined in HN AIPs.

6.2.2.2.3.3. **(Added-USAFESUP)** Aircrew may accept an IFR clearance in IMC at minimum vectoring altitude IAW HN and local procedures given that ATC maintains obstacle/terrain/traffic services. **NOTE:** It is incumbent upon aircrew to be familiar with the minimum IFR altitude at their destination airfield should they need to execute IAW paragraph 6.2.2.2.3. As a technique to determine minimum IFR altitude, aircrew may use the highest MSA as published on either USG or TERPs-reviewed non-USG IAPs (**NOTE:** Aircrew will ensure they reference the TERPs review letter for any MSA adjustments prior to referencing the non-USG IAP). An IAP may be used to determine the MSA regardless of the compatibility of the aircraft. If an MSA is not published (or an IAP is not available), aircrew will use the highest ORTCA (found on the OCONUS Low Enroute Chart) within 10NMs of the field.

6.2.2.2.3.4. **(Added-USAFESUP)** Prior to low-level training within the USAFE-AFAFRICA AOR, units will ensure aircrew are trained and familiar with local and HN allowances for IMC descents into the low-level environment. IMC descents to the low-level environment are prohibited under ATC control if ATC cannot provide obstacle/terrain/traffic separation. Only those aircraft equipped with a Terrain Following/Terrain Avoidance (TF/TA) system are authorized IMC descents to the low-level environment, but only if receiving IFR traffic separation from ATC and executed IAW HN rules and agreements.

6.2.3. Other Minimum Altitudes. Except for MAJCOM-approved aerial demonstrations/events or during takeoff or landing, do not operate aircraft below an altitude that, should an emergency landing become necessary, creates undue hazard to persons or property (T-0).

6.2.3.1. **Military Routes and Special Use Airspace (SUA).** Adhere to minimum altitudes published in FLIP AP for all military routes and special use airspace (e.g., restricted airspace, military operations areas (MOAs), slow speed training routes (SR), IFR military training routes (IR), VFR military training routes (VR), and controlled firing areas) (T-0).

6.2.3.1. **(USAFESUP) Military Routes and Special Use Airspace (SUA).** In the USAFE-AFAFRICA AOR where low-level training areas are used by the HN instead of military routes or special use airspace, reference HN low-level guidance (e.g. AP, Military/Civil AIPs) for minimum altitude information.

- 6.2.3.1.1. Any aircraft operation within a restricted area which is approved by the using agency and coordinated with the controlling ATC agency may deviate from restrictions listed in [paragraphs 6.2.3.2](#) through [6.2.3.4](#) if they are not compatible with the operation of the aircraft and create the same hazards as the operations for which the restricted area was designated.
- 6.2.3.2. **Non-congested Areas.** Operate over non-congested areas at an altitude at or above 500 ft AGL except over open water or in sparsely populated areas (T-0). Under such exceptions, do not operate aircraft closer than 500 ft. to any person, vessel, vehicle, or structure (T-0). Helicopters in FAA airspace or operating IAW host-nation agreements may operate at lower altitudes and in closer proximity if they do not create a hazard to persons or property on the surface.
- 6.2.3.2. (USAFESUP) **Non-congested Areas.** “SUA” also includes all HN defined low-level operating airspace/routes as defined in HN AIPs. USAFE-AFAFRICA rotary-wing aircraft will operate IAW HN rules/agreements and local guidance. In the UK this guidance also applies anytime aircraft are under “Traffic Service” or “Deconfliction Service.” Aircraft operating low-level within the UK will follow published procedures IAW the UK Military Low Flying Handbook (UKMLFH) available via (<https://www.aidu.mod.uk/Milflip/index.php>).
- 6.2.3.3. **Congested Areas.** Operate over congested areas (e.g., cities, towns, settlements) or groups of people at an altitude which ensures at least 1,000 ft. above the highest obstacle within a 2,000-ft. radius (T-0). Helicopters in FAA airspace or operating IAW host-nation agreements may operate at lower altitudes and in closer proximity if they do not create a hazard to persons or property on the surface.
- 6.2.3.4. **Flight over National Recreation Areas and Wildlife Refuges.** Operate no less than 2,000 ft. AGL (mission permitting) over National Park Service monuments, seashores, lake shores, recreation and scenic riverways; US Fish and Wildlife Service refuges; and US Forest Service wilderness and primitive areas (T-1). Specific areas may require higher altitudes (see FLIP and sectional aeronautical charts).
- 6.2.3.4. (USAFESUP) **Flight over National Recreation Areas and Wildlife Refuges.** Reference HN AIPs for minimum altitudes over HN designated national parks and wildlife refuges (or equivalent).
- 6.2.3.5. **Disaster Areas.** Do not operate within designated disaster areas unless the aircraft is assisting in disaster relief efforts (T-0). If the mission requires operation within disaster relief areas, the following procedures must be followed:
- 6.2.3.5.1. For disaster areas declared to protect persons and property on the surface or in the air from a hazard associated with an incident on the surface, do not fly within the designated area unless participating in hazard relief activities and operating under the direction of the official in charge of on-scene emergency response activities (T-0).
- 6.2.3.5.2. For disaster areas declared to provide a safe environment for the operation of disaster relief aircraft or to prevent an unsafe congestion of sightseeing aircraft above an incident which may generate a high degree of public interest, do not fly

within the designated area unless at least one of the following conditions are met (T-0):

6.2.3.5.2.1. The aircraft is participating in hazard relief activities and is being operated under the direction of the official in charge of on-scene emergency response activities (T-0).

6.2.3.5.2.2. The aircraft is operating under an ATC approved IFR flight plan (T-0).

6.2.3.5.2.3. The operation is conducted directly to or from an airport within the area, or is necessitated by the impracticability of VFR flight above or around the area due to weather or terrain; notification is given to the Flight Service Station (FSS) or ATC facility specified in the NOTAM to receive advisories concerning disaster relief aircraft operations; and the operation does not hamper or endanger relief activities and is not conducted for purpose of observing the disaster (T-0).

6.3. Aircraft Speed.

6.3.1. **Supersonic Flight.** Do not operate aircraft at or above Mach 1 except as specified in AFI 13-201, *Airspace Management* (T-1). See same guidance if inadvertent flight occurs above Mach 1.

6.3.1. **(USAFESUP) Supersonic Flight .** Outside the NAS, USAFE-AFAFRICA aircrew will conduct supersonic flight IAW HN rules and agreements. Aircrew will report inadvertent flight above Mach 1 when not in HN-approved airspace IAW AFI 13-201, local, and HN rules and agreements.

6.3.2. In the NAS:

6.3.2.1. Do not exceed 200 knots indicated airspeed (KIAS) at or below 2,500 ft. AGL within 4 NM of the primary airport in Class C or Class D airspace unless authorized by ATC or required to maintain the minimum operating airspeed specified in the aircraft T.O. (T-0).

6.3.2.2. Do not exceed 200 KIAS in the airspace underlying Class B airspace or in a VFR corridor designated through Class B airspace unless required to maintain the minimum operating airspeed specified in the aircraft T.O. (T-0).

6.3.2.3. Do not exceed 250 KIAS below 10,000 ft. MSL (T-0). MAJCOMs may approve operations exceeding 250 KIAS below 10,000 ft. MSL:

6.3.2.3.1. Within restricted areas or MOAs.

6.3.2.3.2. Within DoD/FAA mutually developed instrument routes or DoD developed visual routes. (Do not exceed 250 KIAS on slow speed training routes (SR)).

6.3.2.3.3. Within unpublished DoD- and FAA-designated areas or routes. This provision is intended to accommodate speed requirements, as necessary to accomplish the national defense mission, on an interim basis until the area/route can be published.

6.3.2.3.4. During large-scale exercises or short-term special missions with appropriate coordination to ensure awareness of the nonparticipating flying public.

6.3.2.3.5. When the aircraft T.O. requires a higher airspeed. If the airspeed in the T.O. is listed as a range, fly the slowest practical speed in that range. MAJCOM supplements or MDS-specific guidance do not constitute the aircraft T.O.

6.3.3. **Outside the NAS.** Do not exceed 250 KIAS below 10,000 ft. MSL unless: in international airspace and mission requirements dictate, ICAO/host-nation rules permit, or necessary to maintain the minimum safe airspeed in the aircraft T.O. (T-0).

6.3.4. **Holding.** Conduct holding at airspeeds prescribed in FLIP or MDS-specific guidance (T-0).

6.4. Hazard Avoidance.

6.4.1. **Hazardous Weather.** Use all available information to avoid hazardous weather.

6.4.1.1. **“Severe” Conditions.** Do not operate in any forecast or actual severe condition (e.g. severe icing, turbulence) (T-2). See AFH 11-203, *Weather for Aircrews*, for detailed information.

6.4.1.1. (USAFESUP) **“Severe” Conditions.** USAFE-AFAFRICA/A3 authorizes flight operations in forecast or actual severe conditions IAW AFI 11-2MDSV3 and TO guidance if necessary for the accomplishment of HHQ-tasked and contingency missions. Approval for these missions is delegated to:

6.4.1.1.1. (Added-USAFESUP) **CAF:** Owing OG/CC (or equivalent) or designated representative.

6.4.1.1.2. (Added-USAFESUP) **MAF:** Owing AOC/CC or comparable level of flying supervision if agreed upon between the owning AOC and the unit.

6.4.1.2. **Thunderstorms.** Do not intentionally fly into a thunderstorm (T-2). Damaging lightning strikes, electrostatic discharges, and hail encounters can occur in apparently benign conditions. Do not fly in IMC in the vicinity of actual thunderstorms without operable weather radar (T-2).

6.4.2. **Volcanic Activity.** Unless conducting rescue operations, do not operate within 50 NM of known or reported hazardous volcanic ash (T-2). MAJCOMs may issue guidance on operations including procedures for inadvertent ash encounters and avoidance criteria.

6.4.2. (USAFESUP) **Volcanic Activity.** See [Attachment 9](#) for USAFE-AFAFRICA guidance on operations near Volcanic Activity.

6.4.2.1. Consult an authorized weather source for current Volcanic Ash Advisory Center (VAAC) ash cloud information (or significant meteorological information (SIGMET)) (T-2). If unable to contact an authorized weather source, consider areas depicted on VAAC charts (or SIGMETs) as hazardous. Encounters with volcanic ash will be reported as soon as possible to the controlling agency and aircraft maintenance authorities (T-2). Report volcanic ash encounters to pilot-to-metro service (PMSV) or other weather agencies to ensure rapid dissemination (T-0). See PIREP procedures in the FIH.

6.4.3. **Bird Watch Condition (BWC).**

6.4.3.1. **BWC MODERATE** . Operational commanders will consider restricting formation departures, approaches, and pattern work. To increase the chances of seeing and avoiding birds, avoid hard turns or excessive climb angles. During BWC Phase II periods (see AFI 91-202), accomplish one approach to a full stop unless mission needs warrant additional approaches and sufficient fuel exists to divert if BWC changes to SEVERE (T-3).

6.4.3.2. **BWC SEVERE** . Do not conduct flight operations except in an emergency without OG/CC approval. Arriving aircraft should either hold awaiting a lower BWC or divert (T-3).

6.4.3.3. **Civil or Foreign Fields** . Follow BWC MODERATE procedures if receiving a civilian ATC/Automatic Terminal Information Service (ATIS) hazard advisory to use caution for birds in the vicinity (T-3).

6.4.3.4. NATO countries may use a numerical system to report BWC (see NATO STANAG 3879). Use this intensity conversion: 0-4 for Low, 5 for Medium, 6-8 for Severe. Risk warning updates for NW Europe are available at <https://www.notams.jcs.mil/common/birdtam.html>

6.4.3.5. (**Added-USAFESUP**) USAFE-AFAFRICA units flying low-level missions (as defined per AFI 11-2MDSV3) in the USAFE-AFAFRICA AOR will ensure current applicable BIRDTAM (or HN equivalent system) information is made available to aircrews during mission planning. Airfield management at USAFE-AFAFRICA owned/operated bases will ensure a method is available for transient aircrews to access current BIRDTAM (or HN equivalent system) information for their planned missions.

6.4.3.6. (**Added-USAFESUP**) When BIRDTAM level 6/7/8 (or HN “severe” equivalent) is declared, aircrews are prohibited from low-level training below 2,000 ft. AGL in the affected area(s). (T-3). If notified while airborne, aircrews will adjust route of flight, training area(s), and/or altitude to avoid those areas.

6.4.3.6.1. (**Added-USAFESUP**) When BIRDTAM level 6/7/8 (or HN “severe” equivalent) is reported in a grid that includes a USAFE or AFAFRICA base, the SOF (or equivalent level of supervision) will assess the current local bird activity and adjust the BWC accordingly.

6.5. Flight in Extreme Barometric Pressures. If unable to display proper altimeter setting (i.e. barometric pressure is lower than 28 or higher than 31 inches of mercury), obtain operations group commander approval for sustained flight in IMC below FL180. See AIM for more information.

6.6. Flight in Colder Than International Standard Atmosphere (ISA) Temperatures. If the air temperature at altitude is lower than ISA, true altitude will be lower than indicated by the barometric altimeter.

6.6.1. In the absence of MAJCOM guidance, when flying IFR, or VFR at night (unaided), over mountainous terrain with the outside air temperature (OAT) colder than ISA minus 10°C, plan to fly at least 1,000 ft above published minimum altitudes obtained from terrain and IFR enroute charts (e.g. minimum enroute altitudes (MEA), minimum obstruction clearance altitudes (MOCA), OROCAs or other minimum safe altitudes during low-levels).

MAJCOM/A3s may publish alternate MDS-specific guidance for aircraft that are equipped to measure and display true altitude with the OAT colder than ISA minus 10°C.

6.7. Communications.

6.7.1. **Emergency Frequencies.** If suitably equipped, monitor at least one emergency frequency at all times as mission and operational conditions permit (T-1). Report distress or emergency locator transmitter (ELT) transmissions to ATC (T-1).

6.8. RNAV and RNP Operations.

6.8.1. Navigation Database Operations .

6.8.1.1. Do not modify database waypoints or insert user-defined waypoints on RNAV, RNP, etc. routes or procedures except to change altitude and/or airspeed to assist in complying with an ATC instruction (T-0). Systems which allow additional waypoints on the track may be used.

6.8.1.2. Crosscheck the cleared flight plan against current FLIP, the navigation system textual display, and aircraft map display (if applicable) (T-0). Include confirmation of waypoint sequence, reasonability of track angles and distances, altitude or speed constraints, and identification of fly-by or fly-over waypoints (T-0). Do not execute any procedure for which there is doubt about validity of the navigation database or publications (T-0).

6.8.2. **Random RNAV in the NAS .** Radar monitoring is required on all unpublished (random) RNAV routes (T-0). Refer to FLIP GP.

6.8.3. **Published RNAV routes (Q or T routes) .** If RNAV routes cannot be retrieved from the database, selecting and inserting ALL of the named fixes from the database is permitted.

6.8.4. **Use of RNAV Systems on Conventional Routes and Procedures.** Suitable RNAV systems may be used as a substitute or alternate means of navigation on conventional routes and procedures. MAJCOMs reference FAA Advisory Circular (AC) 90-108, *Use of Suitable Area Navigation (RNAV) Systems on Conventional Routes and Procedures*, and provide operational guidance. Outside the NAS, comply with host-nation/oceanic procedures (T-0).

6.8.4.1. MAJCOMs may approve the use of other RNAV systems (i.e. not “suitable” as defined in AC 90-108) to enhance IFR navigation on conventional routes and procedures. Underlying conventional NAVAIDS/routes/procedures must be tuned and monitored (T-0).

6.8.4.2. “Alternate means” refers to using a suitable RNAV system in lieu of operable conventional NAVAIDS or installed and operable avionics. “Substitute means” refers to using a suitable RNAV system in lieu of out-of-service conventional NAVAIDS or non-installed/non-operable avionics.

6.8.4.3. The following uses are prohibited:

6.8.4.3.1. Substitution for the final approach segment of a VOR/TACAN/NDB approach (T-0).

6.8.4.3.2. Navigation on LOC-based courses (including LOC back-course guidance) without monitoring the raw LOC data (T-0).

6.8.4.3.3. Navigation with DME/DME/IRU systems (without GNSS/WAAS input) unless specifically authorized by NOTAM or FAA guidance (T-0).

6.8.4.3.4. Use of a procedure identified as “NA” without exception by a NOTAM (T-0).

6.8.4.4. Except as prohibited, either substitute or alternate means of navigation may be used as follows:

6.8.4.4.1. Determine position relative to or distance from a VOR, TACAN, NDB, compass locator, or DME fix.

6.8.4.4.2. Determine position relative to or distance from a named fix defined by the intersection of a radial/bearing/course of a VOR/LOC/TACAN/NDB/compass locator.

6.8.4.4.3. Navigate to/from a VOR/TACAN/NDB/compass locator.

6.8.4.4.4. Hold over a VOR/TACAN/NDB/compass locator, or DME fix.

6.8.4.4.5. Fly an arc based upon DME.

6.8.4.5. Operating Requirements and Considerations .

6.8.4.5.1. Retrieve all NAVAIDS, fixes, and procedures from a current navigation database (T-0).

6.8.4.5.2. Tune, identify, monitor, and display the appropriate ground-based NAVAIDs whenever practicable (T-0).

6.8.4.5.3. Notify ATC when substituting for an out-of-service NAVAID (T-0).

6.8.5. (Added-USAFESUP) Operations within RNP-10 or Basic Area Navigation (BRNAV) Airspace . USAFE-AFAFRICA/A3 approves operations within RNP-10 or BRNAV airspace IAW AFI 11-2MDSV3, HN, local, and TO guidance.

6.9. Performance-Based Operations. Performance-based operations may be based on performance of a combination of navigation, communications, and/or surveillance capabilities (e.g., Required Navigation Performance (RNP)).

6.9.1. Do not execute performance-based operations (airspace/routes/procedures) without specific approval (T-2). MAJCOMs will publish special conditions or limitations associated with each performance-based airspace or procedure.

6.9.2. Follow equipment requirements and/or limitations published in FLIP (T-0).

6.9.3. Advise ATC if an equipment failure or other malfunction results in the loss of aircraft capability to continue operations (T-0).

6.9.4. When unable to comply with performance-based operations, revise the route or delay the operation (T-0).

6.10. Legacy Special Civil Airspace Requirements.

6.10.1. Minimum Navigation Performance Specifications (MNPS) Airspace. MAJCOMs must provide approval and guidance for operations in MNPS Airspace. Comply with applicable FLIP area planning documents (T-0). HQ USAF/A35,

through HQ AFFSA/XOF (hqaffsa.xof@us.af.mil), must approve waivers to the requirements of North Atlantic Track Minimum Navigation Performance Specifications (NAT MNPS) and/or Canadian Minimum Navigation Performance Specifications (CMNPS) airspace.

6.10.1.1. **(Added-USAFESUP)** Aircraft and equipment that have been certified by lead commands for operations within MNPS airspace are considered approved by USAFE-AFAFRICA. Comply with MNPS Airspace Operations Manual, Oceanic NOTAMS, FLIP AP Series and applicable AFI 11-2MDS-specific guidance.

6.10.1.1.1. **(Added-USAFESUP)** When the North Atlantic Operations and Airspace Manual uses “should,” USAFE-AFAFRICA aircrews will interpret this as a “shall.”

6.10.2. **Reduced Vertical Separation Minimums (RVSM) Airspace.** Unless specifically cleared by ATC, do not operate in RVSM airspace without functional RVSM equipment (T-0). Comply with applicable FLIP area planning documents (T-0). Notify ATC as soon as possible if required equipment fails after entering RVSM airspace (T-0).

6.11. VFR Flight. When in FAA airspace, adhere to the weather minimums listed in Table 6.1. (T-0). When outside of FAA airspace, comply with guidance in FLIP, FCG, or the ICAO VFR weather minimums depicted in **Table 6.2.** (T-0). When operating under VFR, aircrews must be able to control the aircraft by referencing visual cues from a discernible horizon regardless of cloud clearance requirements (T-0).

6.11.1. Before transition from IFR to VFR, establish appropriate visibility and cloud clearances IAW **Table 6.1** or **6.2.** (T-0).

6.11.2. During transition from VFR to IFR, maintain appropriate visibility and cloud clearance requirements to a minimum IFR altitude until receipt of the IFR clearance (T-0).

6.11.3. Do not operate beneath the ceiling under VFR within the lateral boundaries of controlled airspace designated to the surface for an airport when the ceiling is less than 1,000 feet (T-0).

Table 6.1. NAS VFR Cloud Clearance and Visibility Minimums (T-0).

FAA Airspace Class	Prevailing or Flight Visibility	Distance from Cloud
Class A	Not Applicable	Not Applicable
Class B	3 SM	Clear of Clouds
Class C and Class D	3 SM	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
Class E and G (Fixed-wing) Below 10,000 ft. MSL	3 SM	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
Class E and G (Fixed-wing) At or above 10,000 ft. MSL	5 SM	1,000 ft. below, 1,000 ft. above, and 1 SM horizontal
Class E (Helicopter) Below 10,000 ft. MSL	3 SM	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
Class E (Helicopter) At or above 10,000 ft. MSL	5 SM	1,000 ft. below, 1,000 ft. above, and 1 SM horizontal
Class G (Helicopter) Below 1,200 ft. AGL	Day: 1/2 SM Night: 1 SM	Clear of clouds if operated at a speed that allows the pilot adequate opportunity to see any air traffic or obstructions in time to avoid a collision.
Class G (Helicopter) Above 1,200 ft. AGL and Below 10,000 ft. MSL	Day: 1 SM Night: 3 SM	500 ft. below, 1,000 ft. above, and 2,000 ft. horizontal
Class G (Helicopter) Above 1,200 ft. AGL and Above 10,000 ft. MSL	5 SM	1,000 ft. below, 1,000 ft. above, and 1 SM horizontal
<i>NOTE: When permitted by MAJCOM and ATC, helicopters, IAW SVFR, may operate in lower visibility conditions, if maneuvered at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid a collision.</i>		

Table 6.2. ICAO VFR Cloud Clearance and Visibility Minimums (T-0).

ICAO Airspace Class	Flight Visibility	Distance from Cloud
Class A	Not Applicable	Not Applicable
Class B	8 KMs above 10,000 ft. MSL 5 KMs below 10,000 ft. MSL	Clear of clouds
Class C, D, and E	Same as Class B	1,500 m horizontal 300 m (1,000 ft.) vertical
Class F and G (Fixed-wing) Above 900 m (3,000 ft.) MSL or above 300 m (1,000 ft.) above terrain, whichever is higher	Same as Class B	Same as Class C, D, and E.
Class F and G (Fixed-wing) At and below 900 m (3,000 ft.) or 300 m (1,000 ft.) above terrain whichever is higher	5 KMs	Same as Class C, D, and E.
Class F (Helicopter) Above 900 m (3,000 ft.) or 300 m (1,000 ft.) above terrain whichever is higher	8 KMs above 10,000 ft. MSL 5 KMs below 10,000 ft. MSL	1,500 m horizontal 300 m (1,000 ft.) vertical.
Class F and G (Helicopter) At and below 900 m (3,000 ft.) or 300 m (1,000 ft.) above terrain whichever is higher	5 KMs (See NOTE)	Clear of cloud and in sight of the surface.
Class G (Helicopter) Above 900 m (3,000 ft.) or 300 m (1,000 ft.) above terrain whichever is higher	8 KMs above 10,000 ft. MSL 5 KMs below 10,000 ft. MSL	1,500 m horizontal 300 m (1,000 ft.) vertical
<i>NOTE: When permitted by MAJCOM and ATC, helicopters, IAW SVFR, may operate in lower visibility conditions, if maneuvered at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid a collision.</i>		

Chapter 7

ARRIVAL

7.1. Weather.

7.1.1. **Destination Weather Update.** Obtain the latest destination airport conditions prior to beginning descent or commencing an approach (T-1).

7.1.1.1. **(Added-USAFESUP)** This does not prohibit aircrew from proceeding to a published holding fix on a segment of the published arrival/approach (see paragraph [4.15.3.3.1.1](#) for remote or island destinations). In all cases, aircrew will not delay the decision to divert once the aircraft has already reached the pre-planned fuel state needed to proceed to a designated alternate.

7.1.2. **Required Approach Minimums.** Do not begin a descent if destination weather is below the following required landing minimums:

7.1.2.1. For a straight-in or sidestep approach, the required visibility minimums (T-1).

7.1.2.1.1. **(Added-USAFESUP) Straight-In or Sidestep Approach. CAF Fixed-Wing Only.** Weather must be at or above both the published ceiling and visibility minimums.

7.1.2.2. For a circling approach, both the required ceiling and visibility minimums (T-1).

7.1.3. **Changes to Weather During Arrivals.** If the reported weather decreases below minimums after starting a descent, receiving radar vectors for an approach, or established on any segment of an approach prior to the missed approach point (MAP), the approach may be continued to the MAP and either execute a missed approach or continue to land if conditions in [paragraphs 7.5.2](#) and [7.5.3](#) are met.

7.1.4. **Approach or Landing Near Hazardous Weather.** Do not fly an approach or land at an airport where thunderstorms or other hazardous conditions are producing hail, strong winds, gust fronts, heavy rain, lightning, wind shear, or microbursts (T-2).

7.1.5. Landing Criteria.

7.1.5.1. **Fixed-Wing.** MAJCOMs may authorize Category I Instrument Landing System (ILS) approaches to less than 2400 RVR at locations without Touchdown Zone/Centerline Lighting (TDZ/CL) (or when such system is inoperative) provided the approach is flown using guidance from an approved flight director, heads-up display (HUD), or coupled to an autopilot flown to a Decision Altitude (DA). In addition to MAJCOM approval, authorization must be stated on the instrument approach procedure (IAP) or be published in the inoperative components or visual aids table of the TPP (T-0).

7.1.5.1.1. **Category I (1800 RVR or greater)** . Touchdown zone RVR must be equal to or greater than the specified minimums on the IAP (T-0).

7.1.5.1.1. **(USAFESUP) Category I (1800 ft. (550 m) RVR or greater).** USAFE-AFAFRICA/A3 authorizes Category I ILS approaches IAW AFI 11-2MDSV3, HN and local guidance, and paragraph [7.1.5.1](#).

7.1.5.1.2. **Category II (1200 to less than 1800 RVR)** . Touchdown zone RVR must be equal to or greater than the specified minimums on the IAP (T-0).

7.1.5.1.3. **Category III (RVR less than 1200)** . Touchdown, midfield, and rollout RVR must be equal to or greater than the specified minimums on the IAP (T-0). MAJCOMs will publish Category III RVR requirements if applicable.

7.1.5.1.3. **(USAFESUP) Category III (RVR less than 1200 ft. (350 m))**. USAFE-AFAFRICA/A3 authorizes Cat III ILS approaches IAW AFI 11-2MDSV3.

7.1.5.2. **Helicopter**. Category A minimums may be used regardless of approach speed. Additionally, visibility minimums may be reduced by one-half, but no lower than 1/4 SM PV or 1,200 ft. RVR (T-0). Apply any inoperative approach lighting visibility correction before reducing minimums (T-0). Do not reduce the visibility minimums on Copter, Category II, Category III, and circling procedures; or if “Visibility Reduction by Helicopters NA” is annotated on the procedure (T-0). Apply airspeed limitations IAW **Table 7.1**. (T-0).

Table 7.1. Helicopter Use of Approach Procedures (T-0).

Procedure	Helicopter Visibility Minimums	Helicopter MDA/DA	Maximum Speed Limitations
Conventional (non-Copter)	The greater of: 1. one-half the Category A visibility minimums, or 2. ¼ SM visibility, or - 1200 RVR	As published for Category A	Initiate the final approach segment at speeds up to the upper limit of the highest Approach Category authorized by the procedure, but must be slowed to no more than 90 knots indicated airspeed (KIAS) at the missed approach point (MAP) in order to apply the visibility reduction.
Copter Procedure	As published	As published	90 KIAS when on a published route/track
Global Positioning System (GPS) Copter Procedure	As published	As published	90 KIAS when on a published route or track, EXCEPT 70 KIAS when on the final approach or missed approach segment and, if annotated, in holding. Military procedures are limited to 90 KIAS for all segments.

7.2. Cold Weather Altitude Corrections. Add the values derived from the FIH Temperature Correction Chart to the published procedure altitudes IAW **Table 7.2**. (T-0). Unless otherwise directed by MAJCOM, advise ATC if any applied correction exceeds 80 ft.

7.2. (USAFESUP) Cold Weather Altitude Corrections. For aircraft either not equipped with a Flight Management System (FMS) or not equipped with and FMS capable of cold temperature altitude calculations, reference **Table 7.2.** for when to apply the corrections and the following link for an electronic version of the FIH: <https://dbgia.geointel.nga.mil/downloads/index.cfm>.

7.2.1. Do not apply a temperature correction to an ATC-assigned altitude (T-0). Radar vectoring altitudes assigned by ATC in the NAS are not temperature compensated and may be queried or refused if obstacle clearance is in doubt.

Table 7.2. Cold Weather Altitude Corrections (T-1).

Altimeter Setting Source Temperature	Published IAP	IAP in mountainous terrain	If procedure turn or intermediate approach altitude on the IAP is ≥ 3000 ft above the altimeter setting source (N/A for High-Alt IAF or if only the missed approach altitude is ≥ 3000 ft)
At or Below 32° F / 0° C	Correct all altitudes inside FAF or below 1,000 ft. AGL	Correct all altitudes on the IAP	
At or Below -22°F / -30° C			
<i>NOTE: IAP includes minimum sector altitudes, missed approach altitudes, ESA, MSA, and DME arcs.</i>			

7.3. Types of Arrivals.

7.3.1. **Conventional Arrivals.** Fly these procedures using the appropriate conventional NAVAID(s) as the primary means of navigation except as authorized with approved RNAV equipment (T-0); see **paragraph 6.9.**

7.3.2. **RNAV/RNP/GNSS Arrivals.** Retrieve RNAV/RNP/GNSS procedures in their entirety by procedure name from a current navigation database and compare against approved publications (T-0).

7.3.3. **MAJCOM Certified Procedure.** Fly these procedures as authorized by the MAJCOM.

7.4. Types of Approaches.

7.4.1. **NDB/VOR/TACAN/ILS Approaches.** Fly these procedures using the appropriate conventional NAVAID(s) as the primary means of navigation except as authorized with approved RNAV equipment (T-0); see **paragraph 6.9.**

7.4.2. **RNAV/RNP/GNSS Approaches.** Retrieve RNAV/RNP/GNSS procedures in their entirety by procedure name from a current navigation database and compare against approved publications (T-0).

7.4.3. Self-Contained Approaches (SCA). SCAs are approved for IMC when developed by TERPS authority IAW AFI 11-230 and approved for use by the MAJCOM. When unable to develop a procedure IAW AFI 11-230 by a TERPS authority, see paragraph 7.4.6.

7.4.3. (USAFESUP) Self-Contained Approach (SCA). IAW TERPS criteria in AFI 11-230, HQ USAFE-AFAFRICA/APF (TERPS) may apply Airborne Radar Approach (ARA) criteria to all self-contained approach requests for approval. HQ USAFE-AFAFRICA/APF (TERPS) is the only authorized source for creating SCA within the USAFE-AFAFRICA AOR. Aircrew will request SCA review by contacting HQ USAFE-AFAFRICA/APF (DSN: 314-480-7024; Comm: +49-6371-47-7024; or (usafete.terps@us.af.mil)). SCAs will be executed IAW AFI 11-2MDSV3, local, and TO guidance.

7.4.3.1. **(Added-USAFESUP)** All controlled airfields will require HN and ATC approval prior to SCA execution.

7.4.4. Precision Runway Monitoring (PRM) Approaches. Do not fly PRM approaches unless the aircrew and the aircraft are properly certified by the MAJCOM (T-0). If unable to accept a PRM approach clearance, contact Air Traffic Control System Command Center at 1-800-333-4286 to coordinate an arrival time. Without coordination, expect an ATC-directed divert to a non-PRM airport.

7.4.4. (USAFESUP) Precision Runway Monitoring (PRM) Approaches. Certification of pilots to fly PRM approaches will be completed and documented IAW AFI 11-2MDSV1 and local guidance. Aircraft certification is IAW AFI 11-2MDSV3 and TO guidance.

7.4.4.1. TCAS II equipped aircraft will fly the ILS PRM approach in TA/RA mode (T-0).

7.4.4.2. If an ATC breakout and a TCAS RA are received simultaneously, or shortly after one another, turns will be in accordance with ATC breakout instructions while vertical corrections will be in accordance with the TCAS system (T-0).

7.4.5. Authorization Required Procedures. Do not fly any RNP “Authorization Required”, conventional “Special Authorization”, or any procedure with a note requiring specific authorization without MAJCOM training and operational approval (T-0).

7.4.6. MAJCOM Certified Procedure. MAJCOM/A3s may develop and authorize an approach procedure for use in IMC for their aircraft. Complete MAJCOM-specific training before using such procedures (T-1). These procedures may be performed:

7.4.6.1. With appropriate airspace authority approval (e.g. ATC, Airspace Control Order (ACO), host-nation agreement); or,

7.4.6.2. In conjunction with a compatible published instrument approach procedure; or,

7.4.6.3. In SUA; or,

7.4.6.4. Under VFR.

7.4.7. Radar approaches. Fly these approaches as authorized by MAJCOM.

7.4.7. (USAFESUP) Radar Approaches. USAFE-AFAFRICA/A3 authorizes aircrews to fly published radar approaches (PAR and ASR) to all US military airfields and specially

accredited airfields. USAFE-AFAFRICA/A3 approval is required to fly radar approaches (PAR or ASR) to all other airfields in the USAFE-AFAFRICA AOR. (see paragraph [1.2.5](#) .

7.5. Approach Minimums.

7.5.1. Determining Decision Height (DH)/Decision Altitude (DA)/Minimum Descent Altitude (MDA). Determine minimum approach altitudes with the barometric altimeter except when directed by MAJCOM or aircraft T.O. guidance.

7.5.2. Descent Below DH/DA/MDA. Do not descend below DH/DA/MDA until sufficient visual reference with the runway environment has been established and in a position to execute a safe landing (T-2).

7.5.3. Descent Below 100 ft. Do not descend below 100 ft. above the threshold elevation (THRE) or touchdown zone elevation (TDZE) using the approach lights as a reference unless the red termination bars or the red side row bars are visible and identifiable (N/A on CAT III approaches) (T-2).

7.5.4. (Added-USAFESUP) Pilot Weather Category (PWC) (CAF Fixed-Wing Only) . Reference [Attachment 5](#) for guidance on determining PWCs for use in calculating appropriate instrument approach minimums.

7.6. Inoperative Approach Lighting System (ALS). Unless [paragraph 3.16.1](#) applies, when the runway ALS (or any portion, but not including sequenced flashers or visual glide slope indicators) as depicted on the procedure is inoperative, increase the published visibility minimums of an instrument approach by one of the following:

7.6.1. As directed by the inoperative components table in the TPP (T-0); or,

7.6.2. As stated on IAP, NOTAMS, ATIS, or other airport information source (T-0); or,

7.6.3. If no other guidance is provided, increase published visibility by ½ mile (T-0).

7.6.4. **(Added-USAFESUP)** For non-USG approaches, aircrews are reminded to check the TERPS review letter for further restrictions.

7.7. Landing Gear Reporting Procedures. Retractable gear aircraft will report gear down status to ATC or runway supervisory unit after extending the landing gear (T-2). This report shall be made during any approach prior to crossing the runway threshold (T-2).

7.8. Missed Approach.

7.8.1. Executing the Missed Approach. If at the MAP/DH/DA and not in a position to execute a safe landing, immediately execute the appropriate missed approach procedure or ATC-issued climbout instructions (T-2). If beyond the MAP/DH/DA, coordinate with ATC for climb-out instructions (T-1).

7.8.1.1. The missed approach procedure should not be initiated until over the MAP/DH/DA unless otherwise cleared by ATC. Climbing prior to the MAP/DH/DA is permitted, but ATC should be advised as soon as practical.

7.8.1.2. During an emergency, if unable to comply with the missed approach routing or climb requirements, coordinate alternate climbout instructions to ensure obstacle clearance.

7.8.2. Missed Approach Climb Performance. Prior to starting any instrument approach, ensure compliance with the following missed approach climb gradients:

7.8.2.1. Climb performance must meet or exceed 200 ft/NM or the published missed approach climb gradient, whichever is higher, to an appropriate IFR altitude (T-0).

7.8.2.2. **Multi-Engine Fixed-Wing Aircraft.** Ensure the aircraft can meet 200 ft/NM or the published missed approach climb gradient, whichever is higher, to an appropriate IFR altitude with OEI (T-2).

7.8.2.2.1. If unable to meet published missed approach climb gradient OEI, and operationally necessary, the MAJCOM/A3 may authorize subtraction of up to 48’/NM from the missed approach climb gradient.

7.8.2.2.1.1. **(Added-USAFESUP)** USAFE-AFAFRICA/A3 authorizes subtractions IAW paragraph **7.8.2.2.1.** for the following “operationally necessary” missions:

7.8.2.2.1.1.1. **(Added-USAFESUP)** Training conducted as part of any Building Partnership (BP) deployment/mission or Joint Airborne/Air Transportability Training (JA/ATT).

7.8.2.2.1.1.2. **(Added-USAFESUP)** HHQ tasked or Contingency missions.

7.8.2.2.1.1.3. **(Added-USAFESUP)** Urgent Aeromedical Evacuation missions.

7.8.2.3. **Helicopter.** Climb performance must meet or exceed 200 ft/NM or the published missed approach climb gradient, whichever is higher, to an appropriate IFR altitude which ensures obstacle clearance; or meet 400 ft/NM for “Copter Only” approaches (T-0).

7.9. Land and Hold Short Operations (LAHSO). Fixed-wing pilots are prohibited from accepting LAHSO clearances (T-2).

7.9.1. Aircrews may passively participate in LAHSO (land or take-off when another aircraft has been given a LAHSO clearance). The PIC is the final authority whether to take-off, land, or continue a touch-and-go when a merging aircraft has received a LAHSO clearance.

7.10. Reduced Same Runway Separation (RSRS). MAJCOMs may approve non-formation RSRS operations. Host ATC and user units will publish RSRS procedures (T-2). MAJCOM approval shall include MDS-specific RSRS criteria governing similar and dissimilar landing/touch-and-go/low approach operations.

7.10. (USAFESUP) Reduced Same Runway Separation (RSRS). RSRS operations will be executed IAW AFI 13-204V3 and associated supplements.

7.10.1. **(Added-USAFESUP)** RSRS may be applied to a full-stop, low-approach, or touch-and-go. To facilitate safe RSRS operations, aircrew will pass runway braking action to the appropriate agency in the event that braking action is other than expected/reported.

7.11. Helicopter Landing Areas. Helicopters may operate from/to other than established landing areas (e.g., fields, highways, parks) if conducting an operational or training mission. For training missions, permission must be received to use the area and safeguards must exist to permit operations without hazard to persons or property (T-3).

7.12. Landing With Hot Armament. MAJCOMs will ensure units publish procedures for aircraft operations with hot armament.

7.12. (USAFESUP) Landing With Hot Armament. Units will establish hot armament, hung ordnance, hot brakes, and all other MDS-specific safety procedures (e.g., hydrazine).

7.12.1. Before landing with hot armament or practice munitions at any airfield where such procedures are unfamiliar, aircrew must:

7.12.1.1. Advise the tower of the circumstances (T-0);

7.12.1.2. Advise transient alert and other appropriate agencies (T-0); and,

7.12.1.3. Request taxi instructions to a designated safe (de-arm) area (T-0).

7.12.2. After landing, aircrew must:

7.12.2.1. Avoid taxiing into an area that could threaten personnel or equipment (T-0).

7.12.2.2. Ensure the ground crew is aware of the armament onboard (T-0); and,

7.12.2.3. Request assistance from the nearest DoD facility, if necessary.

7.12.3. **(Added-USAFESUP)** Units will execute landings with live and/or practice heavyweight ordnance IAW AFI 11-2MDSV3, local and HN guidance, and MDS-specific AFTTPs. Additionally, aircrew will review procedures at HN divert/alternate airfields when required to proceed to those fields.

7.13. Touch-and-Go Landings. MAJCOMs will publish guidance addressing operating conditions and qualifications.

7.13. (USAFESUP) Touch-and-Go Landings. Touch-and-go landings shall be executed as authorized in AFI 11-2MDSV3. If no authorization exists in AFI 11-2MDSV3, touch-and-go landings must be approved by the OG/CC (or equivalent). Units may delegate approval authority to no lower than the SQ/DO or designated representative.

7.13.1. **(Added-USAFESUP)** When approved, touch-and-go landings shall be executed IAW TO guidance, AFI 11-2MDSV3, HN and local guidance, and MDS-specific AFTTPs.

7.14. Turns after Touch-and-Go or Low Approach. When operating IFR, do not turn after a touch-and-go or low approach until at least 400 ft. above the DER elevation, at a safe airspeed, and past the end of the runway (if visible) unless specifically cleared by the controlling agency, required by a published procedure, or when executing a closed pattern (T-1).

7.15. Traffic Pattern Procedures.

7.15.1. Fly traffic patterns IAW with control tower instructions, local flying procedures, AFMAN 11-217 series, or FLIP (T-0).

7.15.2. At airports with no control tower, follow the standard light signals or visual indicators that prescribe the direction of traffic and landing runway (T-0).

7.15.3. Helicopters should avoid the flow of fixed-wing aircraft unless operating at a compatible airspeed.

7.16. Practice Instrument Approaches Under VFR. MAJCOM approval is required to practice instrument approaches under VFR. The following restrictions apply:

7.16.1. Maintain VFR cloud clearances and visibilities IAW Tables 6.1 and 6.2 (T-0);

7.16.2. Use terminal radar service when available (T-1);

7.16.3. Make all position reports IAW AFMAN 11-217 series (T-1); and

7.16.4. Request ATC clearance to fly the published missed approach (T-0).

7.16.5. **(Added-USAFESUP)** With OG/CC (or equivalent) approval, aircrew are authorized to practice instrument approaches under VFR IAW TO guidance, AFI 11-2MDSV3, local and HN guidance, and MDS-specific AFTTPs.

7.17. Night VMC Approaches. In the absence of MAJCOM guidance, fly the most precise IAP available (T-1).

7.17. (USAFESUP) Night VMC Approaches. Unless otherwise directed in AFI 11-2MDSV3, HN or local procedures; night VMC approaches/landings will be accomplished using the following availability priority (or as required based on mission/training requirements):

7.17.1. **(Added-USAFESUP)** Precision Approach.

7.17.2. **(Added-USAFESUP)** Non-precision Approach.

7.17.3. **(Added-USAFESUP)** Visual straight-in.

7.17.4. **(Added-USAFESUP)** A VFR traffic pattern may be flown if an instrument approach is not available and safety would be compromised by flying a visual straight-in (e.g., due to obstacles, population centers, etc.).

7.17.5. **(Added-USAFESUP)** Rotary wing aircraft may accomplish visual approaches to helipads, taxiways, and designated landing areas.

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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DD Form 2131, *Passenger Manifest*

(Added-LAKENHEATH) Department of Defense (DD) Form 365-4, *Weight and Balance Clearance Form F–Transport/Tactical*

Abbreviations and Acronyms

AC—Advisory Circular

ADIZ—Air Defense Identification Zone

ADS-B—Automatic Dependent Surveillance-Broadcast

AEO—All Engines Operating
(Added-USAFESUP) AFAFRICA—United States Air Forces Africa
AFSA—Air Force Flight Standards Agency
AFH—Air Force Handbook
AFI—Air Force Instruction
AFJI—Air Force Joint Instruction
AFMAN—Air Force Manual
AFPD—Air Force Policy Directive
AFRC—Air Force Reserve Command
AFREP—Air Force Representative to the FAA
(Added-LAKENHEATH) AFRIMS—Air Force Records Information Management System
(Added-LAKENHEATH) AFTO—Air Force Technical Order
AGCAS—Automatic Ground Collision Avoidance System
AGL—Above Ground Level
AIM—Aeronautical Information Manual
AIR CARD—Aviation Into-Plane Reimbursement Card
AIREP—Air Report
ALS—Approach Lighting System
ALTRV—Altitude Reservation
(Added-LAKENHEATH) AMU—Aircraft Maintenance Unit
ANG—Air National Guard
(Added-USAFESUP) AOC—Air Operations Center
AP—Area Planning
ARCP—Air Refueling Control Point
ARTCC—Air Route Traffic Control Center
(Added-LAKENHEATH) AS—Aviation Schedule
ASAP—Aviation Safety Action Program
ASRR—Airfield Suitability and Restrictions Report
ATC—Air Traffic Control
ATCAA—Air Traffic Control Assigned Airspace
(Added-USAFESUP) ATD—Aircrew Training Devices
ATIS—Automatic Terminal Information Service

(Added-USAFESUP) ATO—Air Tasking Order
(Added-USAFESUP) BDU—Bomb Dummy Unit
BWC—Bird Watch Condition
C2—Command and Control
(Added-USAFESUP) CAF—Combat Air Forces
(Added-USAFESUP) CCA—Civil Aviation Administration
CCMD—Combatant Command
(Added-LAKENHEATH) CCV—Squadron Standardization and Evaluation
CFIT—Controlled Flight Into Terrain
CFR—Code of Federal Regulations (Formerly FARs)
(Added-USAFESUP) CHOP—Change of Operational Control
CMNPS—Canadian Minimum Navigation Performance Standards
CNS—Communications, Navigation, Surveillance
COA—Certificate of Authorization
COMAFFOR—Commander Air Force Forces
DA—Decision Altitude
DCS—Decompression Sickness
(Added-LAKENHEATHSUP) DD—Department of Defense (form)
DER—Departure End of the Runway
DH—Decision Height
DINS—Defense Internet NOTAM Service
DME—Distance Measuring Equipment
(Added-LAKENHEATHSUP) DOT—Squadron Training
EGI—Embedded GPS/INS
EGPWS—Enhanced Ground Proximity Warning System
ELP—Emergency Landing Pattern
ELT—Emergency Locator Transmitter
(Added-LAKENHEATHSUP) EMS/MXMMT—48th Equipment Maintenance Squadron Repair and Reclamation
(Added-LAKENHEATH) EMS/MXMMTA—48th Equipment Maintenance Squadron Transient Alert
(Added-LAKENHEATH) ER—Exceptional Release
ESA—Emergency Safe Altitude

ETA—Estimated Time of Arrival
ETP—Equal Time Point
FAA—Federal Aviation Administration
FAAO—Federal Aviation Administration Order
FBO—Fixed-Base Operator
FCB—Flight Crew Bulletin
(Added-LAKENHEATH) FCF—Functional Check Flight
FCG—Foreign Clearance Guide
FCIF—Flight Crew Information File
FDE—Fault Detection and Exclusion
FDP—Flight Duty Period
FIH—Flight Information Handbook
FL—Flight Level
FLIP—Flight Information Publication
FMC—Flight Management Computer
FMS—Flight Management System
FOD—Foreign Object Damage
(Added-LAKENHEATH) FS—Fighter Squadron
FSO—Flight Safety Officer
FSS—Flight Service Station
(Added-LAKENHEATH) FW—48th Fighter Wing
(Added-LAKENHEATH) FW/CC—48th Fighter Wing Commander
GCAS—Ground Collision Avoidance System
GNSS—Global Navigation Satellite System
GP—General Planning
GPS—Global Positioning System
GPWS—Ground Proximity Warning System
HDD—Head-Down Display
HEEDS—Helicopter Emergency Egress Device System
HMD—Helmet-Mounted Display
(Added-LAKENHEATH) HMU—Helicopter Maintenance Unit
(Added-USAFESUP) HN—Host Nation

HUD—Head-Up Display

IAP—Instrument Approach Procedure

(Added-LAKENHEATH) IAW—In accordance with

ICAO—International Civil Aviation Organization

(Added-USAFESUP) IFF—Identify Friend or Foe

IFR—Instrument Flight Rules

ILS—Instrument Landing System

IMC—Instrument Meteorological Conditions

(Added-LAKENHEATH) IMDS—Integrated Maintenance Data System

INS—Inertial Navigation System

(Added-USAFESUP) INSTM—Instrument

(Added-LAKENHEATH) IOR—instructor of record

(Added-LAKENHEATH) IP—instructor pilot

IR—Infrared

IR—IFR Military Training Routes

ISA—International Standard Atmosphere

(Added-LAKENHEATH) IWSO—instructor Weapons System Officer

JO—Joint Order

JSIR—Joint Spectrum Interference Resolution

(Added-LAKENHEATH) JST—Job Standards

KIAS—Knots Indicated Airspeed

KTAS—Knots True Airspeed

LAHSO—Land and Hold Short Operations

(Added-LAKENHEATH) LAKENHEATHSUP—Lakenheath Supplement

(Added-LAKENHEATH) LANTIRN—Low Altitude Navigation Tactical Infrared for Night

(Added-USAFESUP) LAO—Local Area Orientation

(Added-LAKENHEATH) LKH—RAF Lakenheath

LNAV—Lateral Navigation

LOA—Letter of Agreement

(Added-LAKENHEATH) LOX—Letter of Certification

(Added-USAFESUP) MAF—Mobility Air Forces

MAJCOM—Major Command

MAP—Missed Approach Point
MDA—Minimum Descent Altitude
MDS—Mission Design Series
MEA—Minimum Enroute Altitude
MEP—Mission Essential Personnel
MNPS—Minimum Navigation Performance Specifications
MOA—Military Operations Area
MOCA—Minimum Obstruction Clearance Altitude
MSA—Minimum Safe Altitude
MSL—Mean Sea Level
(Added-USAFESUP) MSO—Mandatory Scramble Order
(Added-USAFESUP) MTC—Mission Training Center
MTR—Military Training Route
(Added-LAKENHEATH) MX—Maintenance
(Added-LAKENHEATH) MXG/CC—48th Maintenance Group Commander
(Added-LAKENHEATH) MXG/MXO—48th Maintenance Group Maintenance Operations
(Added-LAKENHEATH) MXG/MXQA—48th Maintenance Group Quality Assurance
NAS—National Airspace System
NAT—North Atlantic Track
NAVAID—Navigational Aid
(Added-LAKENHEATH) NCOIC—noncommissioned officer in charge
(Added-LAKENHEATH) NLT—No Later Than
NM—Nautical Mile
NOTAM—Notices to Airmen
NVD—Night Vision Device
OAT—Outside Air Temperature
(Added-LAKENHEATH) OCF—Operational Check Flight
ODP—Obstacle Departure Procedure
OEI—One Engine Inoperative
(Added-LAKENHEATH) OG/CC—48th Operations Group Commander
(Added-LAKENHEATH) OG/OGV—48th Operations Group Standardization and Evaluation
(Added-LAKENHEATH) OIC—officer in charge

(Added-LAKENHEATH) OPR—Office of Primary Responsibility

(Added-USAFESUP) OPSEC—Operational Security

OROCA—Off Route Obstruction Clearance Altitude

ORTCA—Off Route Terrain Clearance Altitude

(Added-LAKENHEATH) OSS/OSA—48th Operations Support Squadron Airfield Operations Flight

(Added-LAKENHEATH) OSS/OSAA—48th Operations Support Squadron Airfield Management

(Added-LAKENHEATH) OSS/OSOS—48th Operations Support Squadron Wing Scheduling

OTC—Over-the-Counter

PANS-OPS—Procedures for Air Navigation Services-Aircraft Operations

PAO—Public Aircraft Operations

PBN—Performance Based Navigation

PBO—Performance Based Operations

PED—Portable Electronic Device

(Added-LAKENHEATH) PEX—Patriot Excalibur

PFR—Primary Flight Reference

PIC—Pilot in Command

PIREP—Pilot Report

(Added-LAKENHEATH) PM—program manager

PMSV—Pilot-to-Metro Service

PPS—Precise Position Service

PRM—Precision Runway Monitoring

(Added-LAKENHEATH) PS&D—Plans, Scheduling, and Documentation

PV—Prevailing Visibility

(Added-USAFESUP) PWC—Pilot Weather Category

(Added-LAKENHEATH) QA—Quality Assurance

(Added-LAKENHEATH) QAQVI—Quality Assurance Quality Verification Inspection

(Added-LAKENHEATH) QVI—Quality Verification Inspection

RA—Resolution Advisory

(Added-LAKENHEATH) RAF—Royal Air Force

(Added-LAKENHEATH) RAF (U)—Royal Air Force Unit

RAIM—Receiver Autonomous Integrity Monitoring

(Added-LAKENHEATH) RAP—Ready Aircrew Program
(Added-LAKENHEATH) RAPCON—Radar Approach Control
(Added-LAKENHEATH) RDS—Records Disposition Schedule
RM—Risk Management
RNAV—Area Navigation
RNP—Required Navigation Performance
(Added-USAFESUP) ROE—Rules of Engagement
RPA—Remotely Piloted Aircraft
(Added-LAKENHEATH) RQS/CC—56th Rescue Squadron Commander
(Added-LAKENHEATH) RQS/DOS—56th Rescue Squadron Scheduling
RSRS—Reduced Same Runway Separation
RSU—Runway Supervisory Unit
(Added-LAKENHEATH) RTM—Ready Aircrew Program (RAP) Tasking Memorandum
RTRL—Reduced Takeoff Runway Length
RVR—Runway Visual Range
RVSM—Reduced Vertical Separation Minimum
SAR—Search and Rescue
SARP—Standards and Recommended Practices
SBAS—Satellite-Based Augmentation System
SCA—Self-Contained Approach
SDP—Special Departure Procedures
(Added-USAFESUP) SEB—Standardizations/Evaluations Board
SERE—Survival, Evasion, Resistance, and Escape
SFO—Simulated Flameout
SID—Standard Instrument Departure
SIGMET—Significant Meteorological Information
SM—Statute Mile
SMGCS—Surface Movement Guidance and Control System
(Added-USAFESUP) SOF—Supervisor of Flying
SPINS—Special Instructions
SPS—Standard Position Service
(Added-LAKENHEATH) SQ/CC—Squadron Commander

(Added-LAKENHEATH) SQ/DO—Squadron Operations Officer
SR—Slow Speed Low Altitude Training Routes
SUA—Special Use Airspace
SVFR—Special Visual Flight Rules
TA—Traffic Alert
TAWS—Terrain Awareness and Warning System
TCAS—Traffic Alerting and Collision Avoidance System
TDZ/CL—Touchdown Zone/Centerline Lighting
TDZE—Touchdown Zone Elevation
TEMPO—Temporary
TERPS—Terminal Instrument Procedures
TFR—Temporary Flight Restriction
THRE—Threshold Elevation
T.O—Technical Order
(Added-USAFESUP) TI—Theatre Indoctrination
TOLD—Takeoff and Landing Data
TPP—Terminal Procedures Publication
TSO—Technical Standard Order
UAS—Unmanned Aircraft System
(Added-LAKENHEATH) UK—United Kingdom
(Added-USAFESUP) UPT—Undergraduate Pilot Training
(Added-USAFESUP) USAFE—United States Air Forces in Europe
USCG—United States Coast Guard
USG—United States Government
(Added-USAFESUP) UTD—Unit Training Device
VAAC—Volcanic Ash Advisory Center
VCOA—Visual Climb Over Airport
VFR—Visual Flight Rules
VMC—Visual Meteorological Conditions
VNAV—Vertical Navigation
VR—VFR Military Training Routes
WAAS—Wide Area Augmentation System

(Added-LAKENHEATH) WSO—Weapons System Officer

WX—Weather

Terms

Aerobatics—Intentionally performed spins, vertical recoveries, and other maneuvers that require pitch and bank angles greater than 90 degrees.

Aircrew Member—An individual, designated on the Flight Authorization who is an aircrew member as explained in AFD 11-4, *Aviation Service*, AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Aviation Badges*, 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.

Air Force Flight Standards Agency (AFFSA)—HQ USAF Field Operating Agency charged with the development, standardization, evaluation and certification of procedures, equipment and standards to support global flight operations.

Anti-collision Lights—The primary flashing light system on the aircraft intended to attract the attention of others to enhance sense-and-avoid operations.

ASAP—An identity protected, self-reporting system designed to encourage the voluntary reporting of issues that increase risk to flight operations.

Augmented Aircrew—A basic aircrew supplemented by additional aircrew members to permit in-flight rest. If the basic aircrew requires only one pilot and a second qualified pilot (includes pilots enrolled in an AETC formal aircrew training course) is designated an aircrew member to augment pilot duties, the crew can be considered augmented.

Automatic Dependent Surveillance-Broadcast—A system of two avionics components consisting of a GPS and a transponder (usually Mode S) which will replace radar as the primary surveillance method worldwide. ADS-B consists of two different services: “ADS-B Out” transmits aircraft position to ATC and other aircraft, and “ADS-B In” which receives position of other aircraft and may include separation applications.

Basic Aircrew—Aircrew positions as defined in the aircraft T.O. (or MDS-specific AFI) for the normal operation of the aircraft or mission.

(Added-LAKENHEATH) **Basic Service**—Basic Service provides advice and information useful for the safe and efficient

conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

Civil Twilight—Evening Civil Twilight is the period that begins at sunset and ends in the evening when the center of the sun’s disk is 6 degrees below the horizon. Morning Civil Twilight begins prior to sunrise when the center of the sun’s disk is 6 degrees below the horizon, and ends

at sunrise. Use an authorized weather source, the latest version of the Air Almanac, MAJCOM-approved computer program, or US Naval Observatory data to determine and calculate sun and moon data. Both periods of twilight are considered “day”, unless further restricted by the MAJCOM.

Critical Phase of Flight—In the absence of MAJCOM guidance, this term should include: terminal area operations including taxi, takeoff and landing, low-level flight, air refueling, airdrop, weapons employment, flight using NVDs, tactical/air combat and formation operations (other than cruise), and all portions of any test or functional check flight or any aerial demonstration.

Day—The time between the beginning of morning civil twilight and the end of evening civil twilight, as published in the Air Almanac.

Decision Altitude (DA) / Decision Height (DH)—A specified altitude during a precision approach at which a decision must be made to either continue the approach if the pilot acquires the required visual references, or immediately executes a missed approach. Decision Altitude is referenced to mean sea level and Decision Height is referenced to the threshold elevation.

Diverse Vector Area (DVA)—An area in a radar environment established at the request of Air Traffic that meets TERPS criteria for diverse departures, obstacles and terrain avoidance. Within a DVA, random radar vectors below the MVA/MIA may be issued to departing aircraft.

Emergency Fuel—The point at which it is necessary to proceed directly to the airport of intended landing due to low fuel. Declaration of “emergency fuel” is an explicit statement that priority handling by ATC is both required and expected.

FAA Exemption or Authorization—An official written FAA document which provides the petitioner relief from specified parts of the CFRs.

Fault Detection and Exclusion (FDE)—A RAIM algorithm that can automatically detect and exclude a faulty satellite from the position solution when a sufficient number of redundant satellite measurements are available.

Flight Management Computer (FMC) / Flight Management System (FMS)—An on-board computer system that automates a wide variety of in-flight tasks, to include flight plan management, multi-sensor navigation, aircraft guidance, and performance management.

Formation Flight—More than one aircraft which, by prior arrangement between the pilots, operates as a single aircraft with regard to navigation and position reporting. Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join-up and breakaway. Such a group is treated for ATC purposes as a single aircraft.

Fuel Reserve—The amount of usable fuel that must be carried on each aircraft beyond that required to complete the flight as planned.

Global Navigation Satellite System (GNSS)—A generic term for satellite-based navigation, including GPS, SBAS/WAAS, and any other satellite navigation or augmentation system suitable for aviation use.

Global Positioning System (GPS)—The United States satellite-based radio navigation system that provides a global positioning, navigation, and timing service.

Ground Control Element—Comprises the UAS ground control station, power generation units, communications infrastructure and antenna arrays.

(Added-USAFESUP) Heavyweight Ordnance—Any ordnance 250 lb. class or greater. (The BDU-33 and Small Diameter Bomb are currently the only ordnance that would not be categorized as “heavyweight”)

ICAO—The International Civil Aviation Organization (a UN Specialized Agency), headquartered in Montreal, Canada, is the global forum for civil aviation that works to achieve its vision of safe, secure, and sustainable development of civil aviation through cooperation amongst its member States. Promotes understanding and security through cooperative aviation regulation.

Inertial Navigation System (INS)—A self-contained dead reckoning system that senses acceleration along the three axes of the aircraft and calculates the distance traveled from a reference point. Accuracy of the system decreases with time.

Instrument Meteorological Conditions (IMC)—Ceiling, visibility, and cloud clearances that do not meet the criteria for VMC.

Land and Hold Short Operations (LAHSO)—Procedures developed to expedite traffic flow at civil and joint-use airports needing additional tools to increase capacity. Allows civilian aircraft to operate on intersecting runways simultaneously.

Lateral Navigation (LNAV)—RNAV non-precision approach providing lateral guidance.

(Added-LAKENHEATH) Letter of Certification—Also referred to as the Letter of Xs or LOX. Source: AFI 11-202 Volume 2 and implementing supplements.

Low Close-in Obstacles—Those obstacles within the Initial Climb Area that require an excessive climb gradient to a climb-to-altitude of 200 ft. or less above the Departure End of Runway elevation or alternate takeoff weather minimums. These obstacles are published in NOTAMs, on the SID chart, or in the IFR Take-off Minimums and (Obstacle) Departure Procedures ▼ section of the terminal procedure booklet. Typical chart notation is: “NOTE: Rwy 17L, tree 5610' from DER, 212' left of centerline, 82' AGL/2723' MSL.”

Minimum Fuel—Indicates that an aircraft's fuel supply has reached a state where, upon reaching the destination, it can accept little or no delay. This is not an emergency situation but merely indicates an emergency situation is possible should any undue delay occur.

Minimum Navigation Performance Specification (MNPS)—Implemented in the North Atlantic region between FL285-420 and specifies a number of equipment, training, and procedural requirements. MNPS navigation accuracy is equivalent to RNP 12.6. Dual long-range navigation systems (LRNS) and dual long-range communication systems are required. RVSM is mandatory in MNPS airspace. Aircraft that cannot meet dual LRNS requirements may be accommodated on special routings (“Blue Spruce” routes). Aircraft that cannot meet RVSM requirements are excluded from MNPS airspace unless operating on an ALTRV.

Mode 4—Transponder mode established to enable IFF (Identification Friend or Foe) functions between military aircraft or military aircraft and military ground stations. Uses classified codes,

but operates on 1030 MHz and 1090 MHz; the same frequency pair used by the Air Traffic Control Radar Beacon System that civil air traffic uses for Mode 3A/C, Mode S, and TCAS. Mode 4 interrogation signals can suppress civil airborne transponders; therefore all Mode 4 operations in the NAS require prior authorization through the Air Force Frequency Management Agency (AFFMA): affma.cc@pentagon.af.mil.

Mode 5—Performance upgrade to the current Mark XII IFF transponder system. Mode 5 provides new waveforms, new cryptography, more data, and improved radio frequency (RF) link margin to resolve many of the deficiencies identified with Mark XII. It will eventually replace the analog Mode 4 IFF system with digital IFF message formats which embed unprecedented combat relevant data.

Mode S—The primary role of the Mode S transponder is to "selectively" respond to interrogations, as opposed to responding to all interrogations, from a ground sensor or TCAS to provide airborne data information including identification, equipage, and altitude.

Mountainous Terrain—In the absence of other MAJCOM guidance, USAF aircrews shall consider as mountainous those areas defined in 14 CFR §95.11 for CONUS, Alaska, Hawaii and Puerto Rico. In other areas, use 500 ft. surface elevation change over a ½ NM.

National Airspace System (NAS)—The NAS is the common network of *United States* (U.S.) airspace: air navigation facilities, equipment, services, airports or landing areas, aeronautical charts, information/services, rules, regulations, procedures, technical information, manpower, and material. Included are system components shared jointly with the military. *United States*, in a geographical sense, means (1) the States, the District of Columbia, Puerto Rico, and the possessions, including the territorial waters (within 12 nautical miles) and (2) the airspace of those areas. **Note:** IAW ICAO Article 12 and Annex 2 and 11, the United States has accepted responsibility for providing air traffic services within airspace overlying the high seas beyond 12 miles from the coast (also known as international airspace). These flight information regions of international airspace include: Oakland Oceanic, Anchorage Oceanic, Anchorage Continental, Anchorage Arctic, Miami Oceanic, Houston Oceanic and New York Oceanic. Aircrews should be aware that although they are being provided air traffic services by the FAA, they are operating in international airspace and ICAO SARPS, FLIP, and AFIs are applicable.

Navigation Specification—A set of aircraft and aircrew requirements needed to support performance-based navigation operations within a defined airspace. Comprised of RNAV and RNP specifications.

Night—The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac.

Non-Standard Formation—Operations under any of the following conditions: 1. When the flight leader has requested and ATC has approved other than standard formation dimensions (≤ 1 NM lateral separation or ≤ 100 ft. vertical separation), 2. When operating within an authorized altitude reservation (ALTRV) or under the provisions of a letter of agreement, 3. When operations are conducted in airspace specifically designed for a special activity.

OROCA—An off-route altitude which provides obstruction clearance with a 1,000 ft. buffer in non-mountainous terrain areas and a 2,000 ft. buffer in designated mountainous areas within the United States. This altitude may not provide signal coverage from ground-based navigational aids, air traffic control radar, or communications coverage.

ORTCA—An off-route altitude that provides terrain clearance with a 3,000 ft. buffer from terrain. This altitude may not provide signal coverage from ground-based navigational aids, air traffic control radar, or communications coverage. This altitude is used on enroute charts covering those areas outside the United States.

P-Airfield—Civil airport that permits use by transient military aircraft.

Passenger—An individual onboard the aircraft who is not on the flight authorization. See AFI 11-401 for further guidance.

(Added-LAKENHEATH) Patriot Excalibur—A unit-level software tool that coordinates the activities of flying units

throughout the Department of Defense.

Performance-Based Operations (PBO)—Operations based on stated aircraft and aircrew performance requirements addressing communications, navigation, and surveillance systems.

Portable Electronic Devices (PEDs)—Portable electronic devices which are not installed on an aircraft as standard equipment. PEDs may include temporary mounts, a data interface, an external antenna, and may require aircraft electrical power.

Precise Positioning Service (PPS)—GPS service available to authorized users via the encrypted P(Y) code ranging signal. PPS can offer greater accuracy and resistance to jamming and spoofing.

Predictive RAIM (P-RAIM)—Using a standard set of algorithms, the availability of RAIM may be determined based on the satellite coverage expected at an aircraft's ETA. Due to terrain masking and other factors (e.g., satellite fails after RAIM prediction made), P-RAIM does not guarantee there will be sufficient satellite coverage on arrival. P-RAIM does not have to reside in the GPS receiver. It can be provided by FAA Flight Service (US NAS only) and other ground-based RAIM algorithms.

Prevailing Visibility (PV)—The greatest horizontal visibility observed throughout at least half of the horizon circle. It need not be continuous throughout 180 consecutive degrees.

Primary Flight Reference (PFR)—Any display or suite of displays and instruments used to present the basic flight information needed for immediate control of the aircraft. PFR includes attitude (climb/dive angle or pitch and vertical velocity, bank angle, and a prominent horizon reference), indicated or calibrated airspeed, barometric altitude, heading, appropriate fault indications, and the capability to recognize and recover from an unusual attitude. UAS PFR includes link status, flight guidance mode, and logic.

PRM Approach—An instrument landing system (ILS) approach conducted to parallel runways whose extended centerlines are separated by less than 4,300 ft. and the parallel runways have a PRM system that permits simultaneous independent ILS approaches.

Procedures for Air Navigation Services-Aircraft Operations (PANS-OPS)—ICAO documents detailing specific procedures for the safety of air traffic navigation agreed to by ICAO signatories.

Radar Required—This note on an instrument procedure indicates aircraft using the procedure will be monitored by ATC radar during a particular phase of flight or throughout the entire

procedure, as applicable. Coordination with air traffic is necessary to ensure ATC capability and agreement to provide these services before adding the note to any instrument procedure.

Receiver Autonomous Integrity Monitoring (RAIM)—An algorithm that verifies the integrity of the position output using redundant GPS measurements, or using GPS measurements and barometric aiding. An algorithm that uses additional information (e.g., multi-sensor system with inertial reference system) to verify the integrity of the position output may be acceptable as a RAIM-equivalent.

Reduced Same Runway Separation—Allows reduction of the normal ATC aircraft separation standards during landings and touch-and-goes and restricted low approach operations to increase the airport/runway capacity.

Reduced Takeoff Runway Length Procedure (RTRL)—Method used by TERPS to reduce high IFR climb gradients by shortening the available takeoff runway, thus increasing the distance to the obstacle, spot elevation, or terrain feature. It is normally printed in the IAP ▼ section. An example of an RTRL is “...or with standard takeoff minimums and a normal 200'/NM climb gradient, takeoff must occur no later than 2200' prior to departure end of runway.”

Reduced Vertical Separation Minimum (RVSM)—Reduces the vertical separation between properly equipped and certified aircraft to 1000 ft. in special qualification airspace, normally between FL290-410 inclusive.

Remotely Piloted Aircraft—The aircraft portion of an unmanned aircraft system.

Remote/Island Destination—In the absence of more restrictive MAJCOM guidance, pilots will consider a remote/island destination as any aerodrome that, due to its unique geographic location, offers no suitable alternate within two hours flying time.

RNAV (Area Navigation) Specification—A navigation specification based on RNAV that does not include the requirement for on-board performance monitoring and alerting, designated by the prefix RNAV (e.g., RNAV 5, RNAV 1).

RNAV (Area Navigation) System—A navigation system which permits operation on any desired flight path within the coverage of ground-based, space-based, or self-contained navigation aids, or a combination of these.

RNP (Required Navigation Performance) Specification—A navigation specification based on RNAV that includes the requirement for on-board performance monitoring and alerting, designated by the prefix RNP (e.g., RNP 4, RNP APCH).

RNP (Required Navigation Performance) System—An RNAV system which supports on-board performance monitoring and alerting.

Runway Environment—The runway environment consists of one or more of the following elements: The approach light system (except that the pilot may not descend below 100 ft. above the Touch Down Zone Elevation using the approach lights as a reference unless the red termination bars or the red side row bars are also visible and identifiable), the threshold, threshold markings or threshold lights, the runway end identifier lights, the touchdown zone lights, the runway or runway markings, the runway lights, the visual approach slope indicator. For more information refer to AFMAN 11-217.

Runway Visual Range (RVR)—The maximum distance in the direction of takeoff or landing at which the runway, or the specified lights or markers delineating it, can be seen from a position above a specified point on its center line at a height corresponding to the average eye-level of pilots at touch down. This value is normally determined by instruments located alongside and about 14 ft. above the runway and calibrated with reference to the high-intensity runway lights.

Satellite Based Augmentation System (SBAS)—Generic term for a wide coverage augmentation system to GNSS that calculates integrity and correction data on the ground and uses geostationary satellites to broadcast the data to SBAS users.

Self-Contained Approach—An arrival procedure, normally from an IFR altitude, to a runway, using only navigational equipment onboard the aircraft (GPS, radar, or other sensors).

Single Medium Display—A single medium display is a Head-Up Display (HUD), Head-Down Display (HDD), or Helmet-Mounted Display (HMD) presenting flight instrumentation on a single display such as a HUD combiner, a “glass” multifunction display, or a helmet visor.

Special Departure Procedure (SDP)—A procedure designed to allow a safe takeoff for multi-engine aircraft whose OEI climb rate would otherwise not meet the TERPS minimum climb gradient requirement. The runway and all known obstacles along a chosen takeoff path are analyzed and compared to the aircraft OEI takeoff and climb performance. The procedure provides a maximum allowable takeoff gross weight for given environmental conditions that ensure vertical and lateral obstacle clearance safety margins. The minimum allowable gross and net climb gradients for SDPs are typically lower than TERPS standards. Unlike TERPS, the takeoff path is selected to minimize obstacle clearance requirements and only those obstacles within the lateral limits of the chosen flight path are considered. Pilots should understand that most SDPs allow exactly zero feet of clearance between their aircraft and the offending obstacles, and provide no safety factor for pilot technique, less than 100% engine thrust, etc. The term SDP encompasses both the use of the textual obstacle data table information and the graphical departure procedures.

Standard Formation—A formation in which no participating aircraft is more than 1 NM horizontally and 100 ft. vertically from the lead aircraft.

Standard Positioning Service (SPS)—GPS service available to all users via the course/acquisition (C/A) code ranging signal.

Stopover Flight—A flight where intermediate stops are planned enroute to a final destination.

Strobe Lights—Systems such as wingtip strobes or other similar strobe light installations.

Tactical Operations—Flight operations consisting of maneuvers that are unique to the employment of air power to: gain and maintain air superiority, prevent freedom of operation for the enemy in the objective area, and to assist naval and ground forces in the attainment of their objectives. Tactical operations must be specifically MAJCOM (or CCMD) defined, approved and implemented. These operations are normally practiced only on training or exercise missions, in a form of special use airspace or on designated training ranges or routes.

Terminal Area Operations—Terminal area operations are normally those flight phases conducted within 30 NM of an airfield of intended departure or landing, or those operations on charted Standard Instrument Departures, on charted Standard Terminal Arrivals (STARs), or

other flight operations between the last enroute fix/waypoint and an initial approach fix/waypoint.

Terrain Alert Warning System (TAWS)—Generic term for any on-board system taking inputs from terrain databases, radar altimeter, aircraft position sensors, etc. to activate a Ground Proximity Warning System or Automatic Ground Collision Avoidance System (AGCAS). Developed to help prevent Controlled Flight Into Terrain (CFIT) mishaps.

Traffic Collision Avoidance System (TCAS)—An airborne system that functions independently of the ground-based radar to provide collision avoidance protection between suitably equipped aircraft. TCAS I provides proximity warnings to pilots in the form of traffic advisories. TCAS II provides both traffic advisories and recommended vertical escape maneuvers, known as resolution advisories.

Unmanned Aircraft System (UAS)—Includes one or more control stations, one or more unmanned aircraft, aircraft control and payload datalinks, and mission payloads, designed or modified not to carry a human pilot and operated through remote or self-contained autonomous control. A UAS must meet all applicable requirements of a manned aircraft unless specifically exempted. The term RPA is specific to the Remotely Piloted Aircraft (the flying portion of the UAS).

Unmonitored Navigational Aid—Most NAVAIDs have internal monitoring systems that provide automatic shutdown or notification when a malfunction occurs. Unmonitored NAVAIDs lack the ability to immediately notify ATC when a malfunction occurs. The pilot may still use the NAVAID for all types of navigation, including instrument approaches, but must monitor the NAVAID for a loss of identification since no prior warning of operation may be available from ATC.

Vertical Navigation (VNAV)—A term that describes using GPS lateral and vertical guidance to define the minimums for a GPS non-precision or precision approach.

VFR-on-Top—ATC authorization for an IFR aircraft to operate in VFR conditions at any appropriate VFR altitude (as specified in FLIP and restricted by ATC). A pilot receiving this authorization must comply with VFR visibility, cloud distance criteria, and minimum IFR altitudes.

VFR-over-the-Top—VFR flight maneuver during which an aircraft on a VFR flight plan climbs over a ceiling in VMC, maintains VMC above the clouds, then descends in VMC and lands.

Visual Meteorological Conditions (VMC)—Meteorological conditions in which visual flight rules may be used; expressed in terms of visibility, ceiling height, and aircraft clearance from clouds along the path of flight. When these criteria do not exist, instrument meteorological conditions prevail and instrument flight rules (IFR) must be followed.

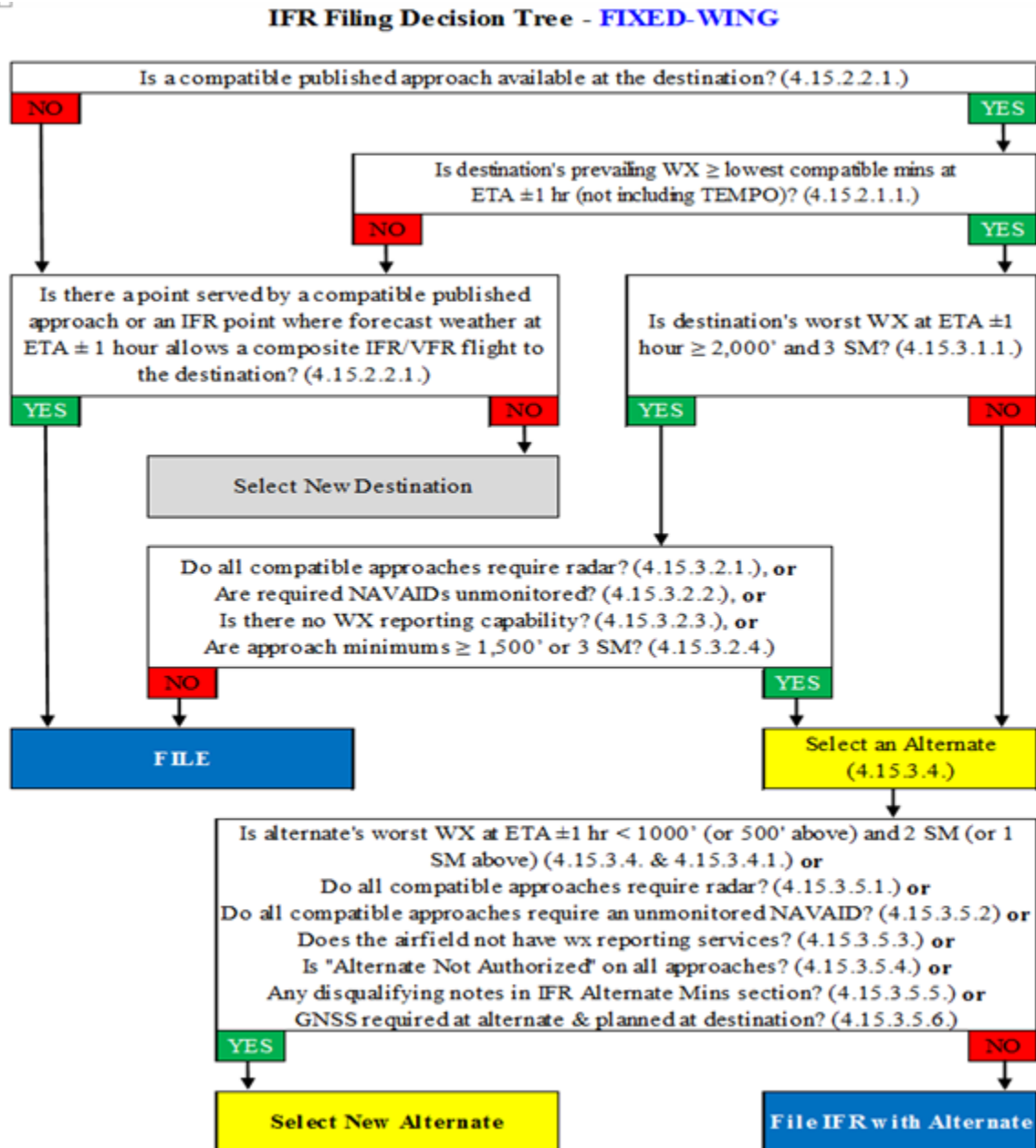
WGS-84—World Geodetic Survey-1984: Developed by the U.S. for world mapping, WGS 84 is an earth fixed global reference frame. It is the ICAO standard.

Wide Area Augmentation System (WAAS)—The U.S. implementation of SBAS which augments GPS SPS.

Attachment 2

IFR FILING DECISION TREE – FIXED-WING

Figure A2.1. IFR Filing Decision Tree – Fixed-Wing.

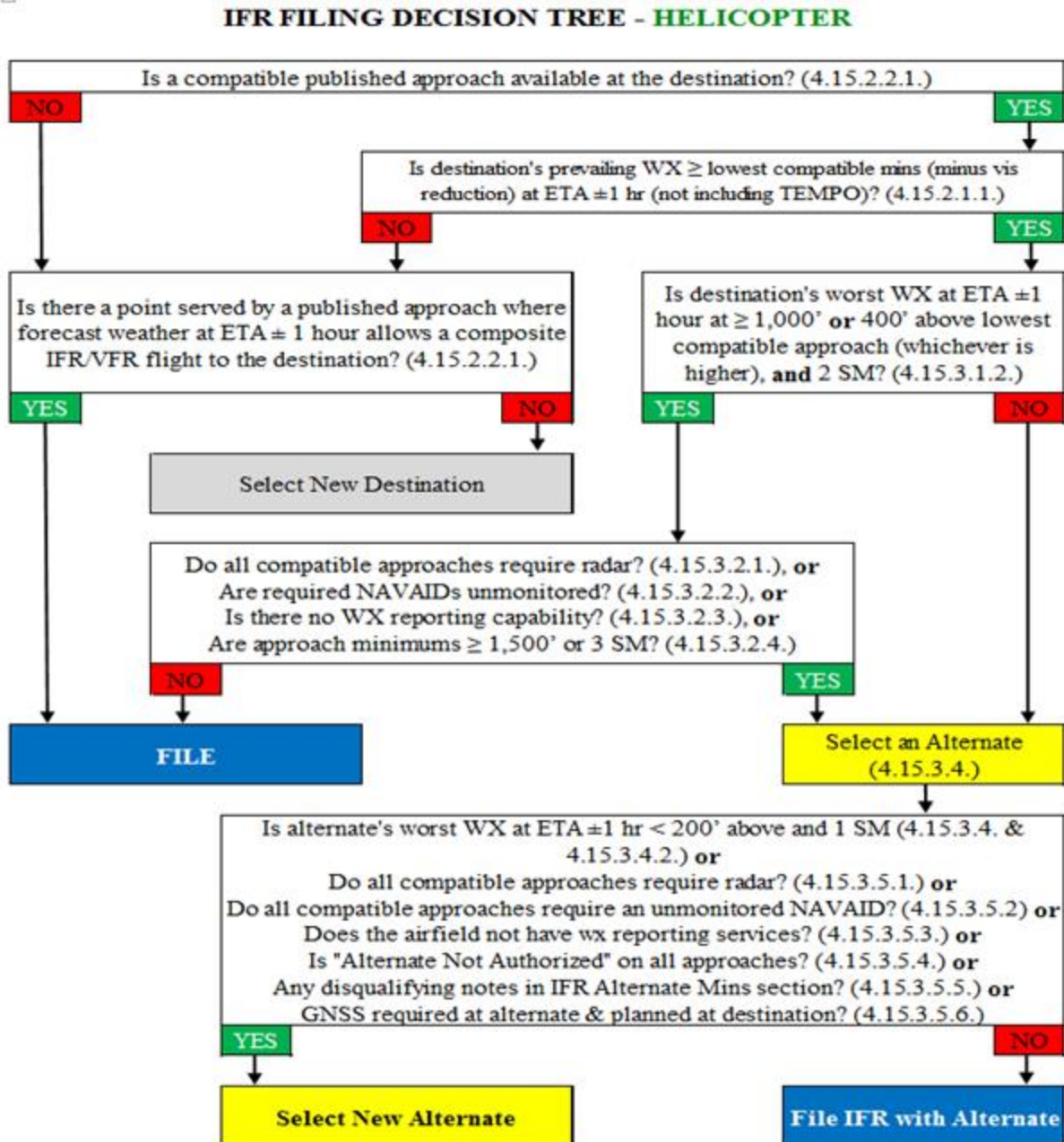


Note: Quick reference only; see full guidance to ensure complete flight planning.

Attachment 3

IFR FILING DECISION TREE-HELICOPTER

Figure A3.1. IFR Filing Decision Tree-Helicopter.

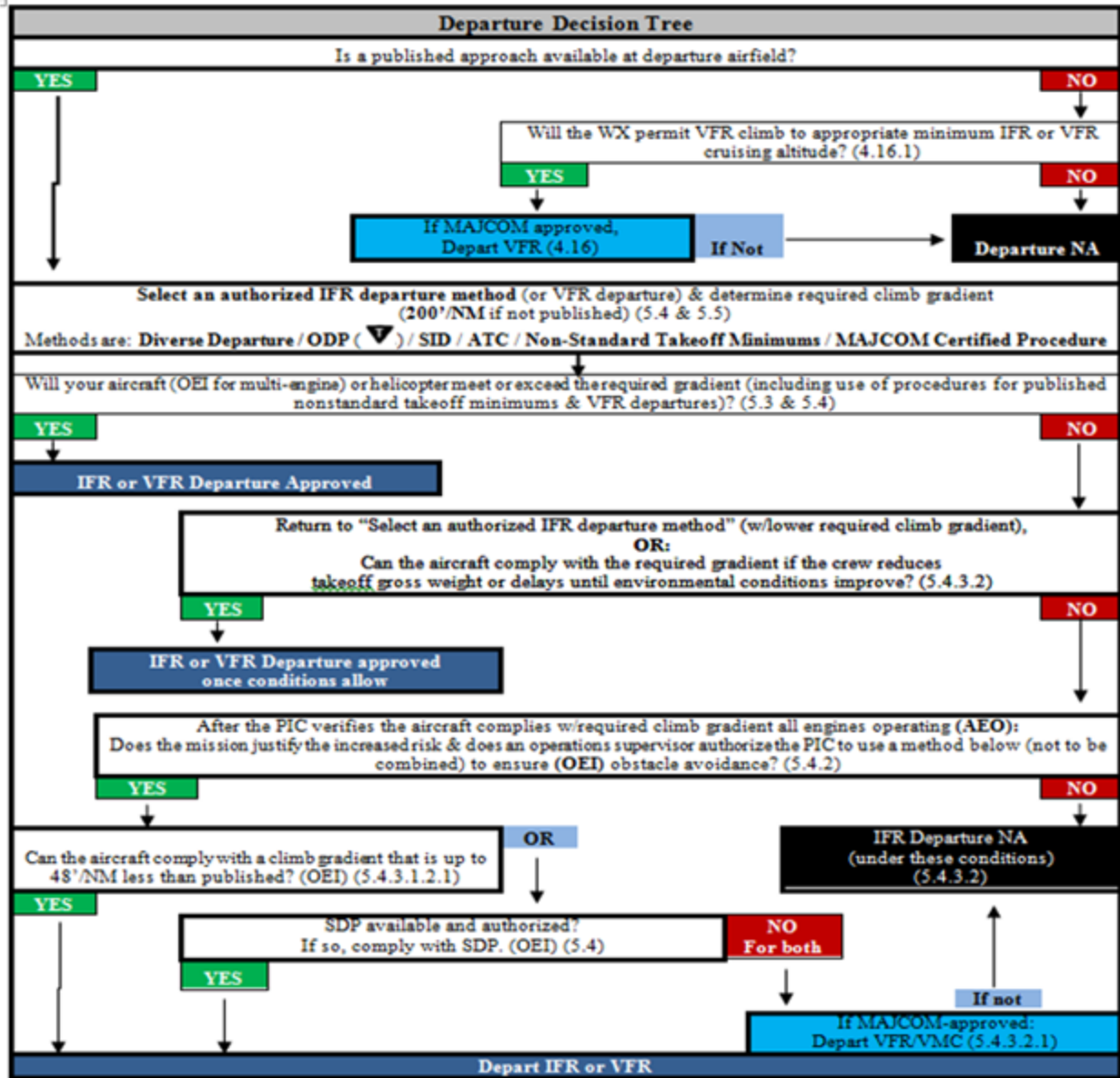


Note: Quick reference only; see full guidance to ensure complete flight planning.

Attachment 4

DEPARTURE DECISION TREE

Figure A4.1. Departure Decision Tree.



Note: PICs shall conduct departure planning IAW AFMAN 11-217 and this instruction.

Attachment 5 (Added-USAFE)**PILOT WEATHER CATEGORY (PWC) DETERMINATION AND USE**

A5.1. (USAFESUP) Use the following guidance to assign PWCs for use in determining appropriate instrument approach minimums.

A5.2. (USAFESUP) SQ/CCs will assign a PWC according to the individual's assessed proficiency and capability, but in no case lower than the criteria specified in **Table A5.1**. Annotate PWCs on the unit Letter of Certifications (see AFI 11-202V2 and associated supplements).

A5.2.1. (USAFESUP) Non USAFE-AFAFRICA aircrew who fly USAFE-AFAFRICA aircraft on a temporary basis will use the PWCs of their parent MAJCOM or as annotated on cross command Letter of Agreement (LOA). Completion of local TI academics is a prerequisite to use any other MAJCOM PWCs in the USAFE-AFAFRICA AOR less than 700 ft/2 SM (3200 m).

A5.2.2. (USAFESUP) During the hours of daylight (including civil twilight) at the home airfield, OG/CCs (or equivalent) may authorize all MR pilots to use published approach minimums rather than PWCs. This authorization may not be delegated, but may be published in local guidance as a blanket authorization.

A5.2.3. (USAFESUP) If an IP occupies the rear cockpit, the IP's PWC may be used.

A5.2.4. (USAFESUP) If non-current for a precision approach per AFI 11-2MDSV1 and associated RAP Tasking Memorandum, increase PWC by one category until currency is regained.

A5.2.5. (USAFESUP) For formation approaches use the most restrictive PWC in the formation, but in no case less than AFI 11-2MDSV3 weather requirements.

A5.2.6. (USAFESUP) For straight-in approaches, calculate DH/MDA at each PWC by referencing the following elevations in order of priority: Touch-Down-Zone Elevation (TDZE), Runway Threshold Elevation (THRE), then field elevation.

A5.2.7. (USAFESUP) For circling approaches, calculate MDA by referencing the airport/airfield elevation.

Table A5.1. (Added-USAFESUP) USAFE-AFAFRICA Pilot Weather Categories (CAF Fixed-Wing Only).

CAT	MINIMUMS	CRITERIA
A	Published approach minimums	150 pilot hours in MDS and 1,000 hours total. Demonstrated proficiency at Cat B. (Notes 1 and 2)
B	Published approach minimums, or 300 ft / 1 SM (1600 m), whichever is higher	100 pilot hours in MDS and 750 hours total, or 150 pilot hours in MDS and 350 hours total. Demonstrated proficiency at Cat C. (Notes 1 and 2)
C	Published approach minimums, or 500 ft / 1.5 SM (2400 m), whichever is higher	Local Area Orientation (LAO) (TI academics & flight) complete and cleared unsupervised flight in appropriate training documentation. (Note 3)
D	Published approach minimums, or 700 ft / 2 SM (3200 m), whichever is higher	Current Instrument (INSTM) qualification in MDS
E	Published approach minimums, or 1500 ft / 3 SM (5000 m), whichever is higher	Pilots that have not completed or have an expired INSTM qualification in MDS
<p>NOTE 1: “Hours” are actual flight hours. Mission Training Center (MTC) time may not be used.</p> <p>NOTE 2: When calculating total time, Undergraduate Pilot Training (UPT) time may be included, but do not include non-pilot (i.e., “other”) flight time.</p> <p>NOTE 3: “Cleared unsupervised in appropriate training documentation” applies only to pilots not previously Cat C or other MAJCOM equivalent (i.e., ACC Cat 3).</p>		

Attachment 6 (Added-USAFESUP)

CONTROL OF FIGHTER AIRCRAFT FOR OFF STATION SORTIES/DIVERTS

A6.1. (USAFESUP) Airfield Criteria

A6.1.1. (USAFESUP) Unless the planned base is covered by NATO STANAG 3113, *Provision of Support to Visiting Personnel, Aircraft, and Vehicles*, for contract fuel, the bill must be paid from the unit operations and maintenance funds.

A6.1.2. (USAFESUP) Usable runway length and arresting systems for USAFE-AFAFRICA and USAFE-AFAFRICA gained fighters are IAW [Table A6.1](#). Waiver authority is the OG/CC (or equivalent).

Table A6.1. (USAFESUP) Required Runway Length and Arresting Gear.

Aircraft	Landing Surface (Note 1)	Arresting Gear (Notes 2,3)
F-15C	7000 ft	BAK 9/12/13 or combination BAK 14
F-15E	7500 ft	BAK 9/12/13 or combination BAK 14
F-16	7000 ft	BAK 6/9/12/13 or combination BAK 14

NOTE 1: Landing surface is 125 percent of takeoff/landing distance or stated runway length, whichever is greater. Minimum runway width for all CAF aircraft is 75 feet unless specified in MDS specific publications.

NOTE 2: HN equivalent arresting gear is acceptable if listed in the FIH

NOTE 3: Aircrew must verify the capability/compatibility of arresting systems not listed in the FIH by contacting HN airfield management or other HN contacts (to include the Defense Attaché if direct HN contact is not possible) prior to arrival.

A6.1.3. (USAFESUP) Security provisions compatible with the aircraft or equipment classification must be available at the airfields. Aircrew will coordinate with their wing security office for the most updated published guidance. The following references are provided for aircrew awareness and should be a part of every unit's off-station aircraft security procedures: FCG, AFI 31-101, *Integrated Defense*, AFI 16-1404, *Air Force Information Security Program*, and associated supplements.

A6.2. (USAFESUP) Responsibilities:

A6.2.1. (USAFESUP) USAFE-AFAFRICA bases will establish command post procedures for flight following during off-station training flights. Parent unit command posts will monitor unit aircraft on all flight segments. The base of departure will pass the following information to the scheduled destination base: call sign, departure time, estimated time of arrival, and alternate airfields. When departing other than home station, aircrew will place the

following statement in the remarks section of DD Form 1801: “RMK/PASS ATD-ETA TO XXXX BASE OPERATIONS” (XXXX being ICAO identifier for parent unit airfield).

A6.2.2. **(USAFESUP)** Units will ensure the responsible individual at their parent unit (e.g., Ops Sup, SOF, OG/CC, etc.) is immediately notified when destination base weather deteriorates.

A6.2.3. **(USAFESUP)** Aircrew will contact their parent unit command post after completing each day’s flights with the flight times and aircraft status. The PIC will ensure the installation command post (if available) has the PICs lodging location and telephone number.

A6.2.4. **(USAFESUP)** PICs will inform parent units of changes to itinerary prior to occurrence, if practical. If unable, report itinerary changes to parent command post as soon as practical upon landing at the next destination.

A6.2.5. **(USAFESUP)** Units will include cross-country checklists in in-flight guides. Checklists should include pre- and post-flight procedures, with emphasis on aircrew-to-ground crew communication. Aircrew supervision of servicing operations at non-USAFE-AFAFRICA bases is required. At bases where arresting systems are listed as “available upon request,” aircrew will verify suitable departure end arresting gear is rigged prior to takeoff.

A6.2.6. **(USAFESUP)** Sustained deployed operations such as contingency operations or weapons training deployments operate under the control of contingency operation SPINS and host unit procedures.

Attachment 7 (Added-USAFESUP)**USAFE-AFAFRICA CAF ALERT GUIDANCE**

A7.1. (USAFESUP) Alert Duty. Unless otherwise specified in AFI 11-2MDSV3, units will use the following alert procedures:

A7.2. (USAFESUP) Alert Scheduling. Do not schedule an aircrew member for more than 7 days of continuous alert duty. Following a 7-day tour, an aircrew must have a minimum of 24 hours rest time away from the alert site before beginning a subsequent alert tour. If aircrew swap-out is delayed following a 7-day tour, an aircrew may extend for one 24-hour period with Sector Director/Director of Operations (DO) approval.

A7.2.1. (USAFESUP) Qualified pilots may be placed on alert regardless of their PWC. If observed or forecast weather is below PWC criteria, pilots will be placed on mandatory alert status.

A7.2.1.1. (USAFESUP) "Mandatory alert status" is a status whereby the aircrew will only scramble for a launch if given a Mandatory Scramble Order (MSO).

A7.2.1.2. (USAFESUP) MSOs will only be directed for real world events requiring immediate response. In no case will an aircrew launch if they consider conditions unsafe for flight.

A7.2.2. (USAFESUP) An alert aircrew or alert site commander may put the site on restricted or mandatory alert status at any time due to crew rest considerations (actual/planned tasking, fatigue, or other factors).

A7.3. (USAFESUP) Flight Duty Period (FDP).

A7.3.1. (USAFESUP) Initial FDP is IAW **Chapter 2** guidance and begins with the first squadron duty or alert changeover briefing, whichever occurs first. After the first crew rest period while on alert, subsequent FDPs begin with any official tasking and will not exceed 12 hours.

A7.3.2. (USAFESUP) The FDP for alert aircrews traveling to the alert sight via commercial air begins one hour prior to the scheduled commercial air takeoff. For alert aircrews traveling via military air, the FDP begins upon arrival at the squadron for mission preparation/briefing.

A7.3.3. (USAFESUP) Planned taskings (e.g., training sorties, aircraft swaps, etc.) will not exceed the FDP. If an actual alert tasking results in an aircrew member exceeding the FDP, replace or put the aircrew on mandatory alert status until crew rest is attained.

A7.3.4. (USAFESUP) An aircrew member may fly up to three sorties during an FDP. Alert scrambles do not have a day/night combination limit. Upon reaching the sortie limit, replace the aircrew member or put on mandatory alert status until crew rest is attained.

A7.3.5. (USAFESUP) An aircrew member may perform non-alert duty after being on alert if **Chapter 2** crew rest requirements are met. The post-alert duty day begins at changeover, scramble activity (including battle stations or a "suit-up" call), or other official tasking, whichever occurs first.

A7.4. (USAFESUP) Crew Rest

A7.4.1. (USAFESUP) Upon assuming alert duties, alert aircrew enter crew rest. For same day aircrew swap-outs at the end of the aircrew 12-hour crew duty day, the unit will go on mandatory alert status until aircrew have had the opportunity for 8 hours of uninterrupted rest. After required crew rest is obtained aircrews may begin a FDP IAW [A7.3.](#) .

A7.4.2. (USAFESUP) **Normal Sleeping Hours** . Except for actual alert taskings, do not disturb alert crews from 2200-0600L. For any planned missions (actual alert or training) that start during, or extend into the period 2200-0600L, make all possible attempts to notify aircrew members in enough time for mission preparation and crew rest. Any tasking or duty accomplished by the aircrew during this period will be considered official duties and will impact crew rest and FDP determinations. This includes those duties in paragraph [A7.4.3.2](#) that do not normally affect crew rest and FDP (e.g., obtaining weather/NOTAMS, power-on checks, aircraft acceptance).

A7.4.3. (USAFESUP) Once meeting [Chapter 2](#) crew rest requirements, aircrew may start a new alert FDP. The crew rest period for alert is defined as the period when official alert duties are not being performed.

A7.4.3.1. (USAFESUP) Official alert duties are defined as alert scrambles to include battle stations, runway alert, hot cocking, or a suit-up call.

A7.4.3.2. (USAFESUP) Official alert duties do not include checking weather, NOTAMS, Power-on checks (i.e., those checks accomplished without engine start, or aircraft acceptance), and walk around and forms check if performed during the hours of 0600-2200L.

A7.4.4. (USAFESUP) **Restricted status** . If the air defense sector and the unit determine that the aircrew needs to be put into crew rest due to probable future tasking, they may place the unit on restricted status.

A7.4.4.1. (USAFESUP) When on restricted status, alert crews will be in crew rest.

A7.4.4.2. (USAFESUP) Restricted status differs from “mandatory alert status” in that it does not require up-channel reporting or prevent a HHQ tasking.

A7.4.4.3. (USAFESUP) **Squadron Supervision** . Squadron supervisors recalled to perform supervisory/SOF duties during an actual alert scramble do not need to meet crew rest requirements for that duty. However, they must obtain required crew rest before returning to duty if scheduled to fly.

Attachment 8 (Added-USAFESUP)**FUNCTIONAL CHECK FLIGHT (FCF)/OPERATIONAL CHECK FLIGHT (OCF)
GUIDANCE**

A8.1. (USAFESUP) General . Guidance in this attachment is in addition to AFI 21-101, *Aircraft and Equipment Maintenance Management* (and applicable supplements), and TO 1-1-300, *Maintenance Operations Checks and Check Flights*. In addition to the aircraft listed in AFI 21-101 (C-130, C-135), units with OSA/VIP/SAM aircraft rarely perform FCFs. When an FCF is needed in these MDSs, the OG/CC (or equivalent) issues temporary written certification designating the most highly qualified crews available (also reference AFI 11-2MDS guidance on FCFs).

A8.1. (LAKENHEATH) Applicability. Paragraphs prefaced with (C), (E), or (HH-60) are only applicable to F-15C, F-15E, or HH-60 aircraft respectively.

A8.2. (USAFESUP) Responsibilities:**A8.2.1. (USAFESUP) OG/CC (or equivalent) will:**

A8.2.1.1. (USAFESUP) Appoint an OG FCF Program Manager.

A8.2.1.2. (USAFESUP) Select only highly qualified individuals as FCF flight crews.

A8.2.1.3. (Added) (LAKENHEATH) (HH-60) The 48 OG/CC delegates approval for all HH-60 FCF's to the 56th Rescue Squadron Commander (56 RQS/CC).

A8.2.1.4. (Added) (LAKENHEATH) (C) (E) Certify all FCF aircrew in writing.

A8.2.1.5. (Added) (LAKENHEATH) (C) (E) Approve all FCF sorties.

A8.2.1.6. (Added) (LAKENHEATH) (C) (E) Authorize fixed wing temporary waivers for aircrew qualification when operational requirements dictate.

A8.2.2. (USAFESUP) OG FCF Program Manager will: (at OG/CC discretion, any of these items may be delegated to a squadron-level FCF Program Manager):

A8.2.2.1. (USAFESUP) Ensures a standard FCF profile and associated procedures are established for each type of assigned aircraft IAW TO 1-1-300.

A8.2.2.2. (USAFESUP) Ensure the FCF certification and training program consists of reviewing:

A8.2.2.2.1. (USAFESUP) Applicable aircraft FCF publications.

A8.2.2.2.2. (USAFESUP) Local FCF procedures for the type of aircraft being flown.

A8.2.2.2.3. (USAFESUP) Applicable -6 TO worksheets

A8.2.2.2.4. (USAFESUP) Procedures for Aircrew Training Devices (ATD) if applicable.

A8.2.2.3. (USAFESUP) Develop a written examination of no less than 25 questions based on applicable FCF publications.

A8.2.2.3.1. (USAFESUP) Passing grade is 85% correctable to 100%.

A8.2.2.3.2. (USAFESUP) The exam will be administered and filed (the PEX/GTIMS Stan/Eval module may be used) by OGV. The exam will be reviewed and rewritten annually.

A8.2.2.4. (USAFESUP) Review FCF results quarterly for trends, identifies deficient areas, and forwards recommendations for improvements to applicable OG leadership for review or action.

A8.2.2.5. (Added-LAKENHEATH) Generate and distribute FCF read files to update local FCF procedures. The FCF read files will be maintained at the FCF program manager (PM) in 48 OG Standardization and Evaluation (48 OG/OGV) or electronic file located on the 48 OG Stan/Eval SharePoint® page (<https://portal.usafe.af.mil/sites/48FW/48thOperationsGroup/48OGStanEval/default.aspx>).

A8.2.2.6. (Added-LAKENHEATH) Serve as the liaison between maintenance and operations with respect to the FCF program.

A8.2.3. (Added-LAKENHEATH) **Squadron Commander (SQ/CC) will :** Approve aircrew entry into the FCF program.

A8.2.3.1. (Added) (LAKENHEATH) (HH-60) Certify all FCF aircrew in writing.

A8.2.4. (Added-LAKENHEATH) **Squadron Operations Officer (SQ/DO) will:** Track FCF aircrew availability and direct upgrades to ensure sufficient numbers exist to facilitate mission accomplishment.

A8.2.5. (Added-LAKENHEATH) **Squadron Training (DOT) will:**

A8.2.5.1. (Added-LAKENHEATH) Initiate requests to place aircrew in the FCF upgrade program.

A8.2.5.2. (Added-LAKENHEATH) Be responsible for tracking FCF currency for each aircrew in the FCF program, and ensures appropriate Mission Training Center (MTC) or sortie is scheduled prior to currency expiration.

A8.3. (USAFESUP) FCF Aircrew Management. Reference AFI 11-2MDSV1 certification and currency guidance. If no guidance exists, the following will be used:

A8.3.1. (USAFESUP) **FCF Aircrew Designation** . Unless otherwise stipulated in AFI 11-2MDS volumes, use the following minimum hourly criteria, including UPT time for pilots, to nominate aircrew for FCF certification:

A8.3.1.1. (USAFESUP) 750 hours total and 200 hours PAA time, or

A8.3.1.2. (USAFESUP) 650 hours total and 300 hours PAA time, or

A8.3.1.3. (USAFESUP) 575 hours total and 400 hours PAA time.

A8.3.1.4. (Added) (LAKENHEATH) (C) (E) High-Speed Taxi Aircrew Designation. Perform high speed taxi checks with qualified FCF aircrew.

A8.3.1.5. (Added) (LAKENHEATH) (C) (E) OCF sorties require experienced aircrew as defined by AFI 2MDSV1.

A8.3.1.6. **(Added) (LAKENHEATH)** (HH-60) OCFs will be flown with an experienced aircraft commander. The co-pilot may be inexperienced.

A8.3.1.7. **(Added-LAKENHEATH)** FCF PM (or designated representative) briefing.

A8.3.1.8. **(Added) (LAKENHEATH) (HH-60) Upgrade Documentation and Requirements.**

A8.3.1.8.1. **(Added-LAKENHEATH)** Squadron Stan/Eval (CCV) will track FCF certification on the Letter of Certification (LOX).

A8.3.1.8.2. **(Added-LAKENHEATH)** The FCF open-book test will be tracked in Patriot Excalibur (PEX). It will be accomplished on a recurring currency IAW AFI 11-2HH-60 Volume 1 HH-60G RTM.

A8.3.1.8.3. **(Added-LAKENHEATH)** Upgrading aircrew will accomplish a FCF full profile in an aircraft.

A8.3.1.9. **(Added) (LAKENHEATH) (C) (E) Upgrade Documentation and Requirements.**

A8.3.1.9.1. **(Added-LAKENHEATH)** The 48 OG FCF certification letter (located on 48 OG Stan/Eval SharePoint page) will be signed by the SQ/DO initiating the upgrade process for fixed wing aircrew. The 48 OG/CC will sign the certification letter upon completion of required training for fixed wing aircrew.

A8.3.1.9.2. **(Added-LAKENHEATH)** Accomplish the FCF open-book test in PEX. The test will be tracked in PEX.

A8.3.1.9.3. **(Added-LAKENHEATH)** Maintain a copy of the MTC gradesheet, sortie gradesheet, and signed certification letter in section 3 of the aircrew member's training folder.

A8.3.1.9.4. **(Added-LAKENHEATH)** Published FCF MTC profiles are maintained with the MTC. Primary and secondary engine restarts are mandatory profile items.

A8.3.1.9.5. **(Added-LAKENHEATH)** Upgrading aircrew will accomplish a FCF full profile in the MTC with a current FCF pilot or Weapons System Officer (WSO) in the MTC or on the console. If the MTC is not available, accomplish an extra flight.

A8.3.1.9.6. **(Added-LAKENHEATH)** Upgrading aircrew will accomplish a FCF full profile in an aircraft. **EXCEPTION:** F-15E upgrade training sorties will not perform secondary mode restarts unless flying an actual FCF sortie.

A8.3.1.9.6.1. **(Added-LAKENHEATH)** Supervision for upgrading aircrew will be a FCF qualified instructor pilot (IP), instructor WSO (IWSO), or the FCF PM, if qualified in the F-15E.

A8.3.1.9.6.2. **(Added) (LAKENHEATH) (C)** Supervision for upgrading pilots will be a FCF qualified IP in the aircraft, or flying as chase.

A8.3.1.9.6.3. **(Added-LAKENHEATH)** FCF upgrades may be flown in conjunction with an actual FCF with OG/CC approval. If the FCF profile is incomplete due to maintenance or weather issues, the upgrade may be considered complete at the discretion of the instructor of record (IOR).

A8.3.2. **(USAFESUP) Currency.** In addition to performing an actual FCF flight, FCF currency may be updated by accomplishing an FCF profile in an MTC, Unit Training Device (UTD), or equivalent, but aircrew must be under the supervision of an FCF-certified aircrew (either in the sim or on the console). FCF currency may also be updated by flying an FCF training profile with a certified FCF aircrew either as chase or in the rear cockpit (if equipped).

A8.3.2. **(LAKENHEATH) (C) (E)** A simulator console instructor (civilian contractor) is a suitable substitute for an FCF qualified aircrew.

A8.3.2.1. **(USAFESUP)** FCF pilot currency for single seat aircraft is 90 days.

A8.3.2.2. **(USAFESUP)** FCF pilots of single-engine aircraft must maintain a 30-day SFO landing currency. Currency shall be updated/regained IAW AFI 11-2MDSV1 (i.e., updating currency may be done in an MTC, but regaining lost currency must be done in-flight).

A8.3.2.2. **(LAKENHEATH) (E)** FCF aircrew currency is 180 days.

A8.3.2.3. **(USAFESUP)** Non-current FCF aircrew will not perform actual FCF flights until currency is achieved. To regain currency, FCF aircrew must accomplish either:

A8.3.2.3. **(LAKENHEATH) (C) (E)** FCF sorties require demanding mission currency.

A8.3.2.3.1. **(USAFESUP)** An FCF profile in an MTC, UTD, or equivalent under the supervision of an FCF-certified aircrew (either in the sim or on the console).

A8.3.2.3.2. **(USAFESUP)** Flying an FCF training profile with a certified FCF aircrew either as chase or in the rear cockpit (if equipped).

A8.3.2.4. **(USAFESUP)** If an FCF aircrew remains non-current for more than six months, an FCF certification program will be reaccomplished. Waiver authority is the OG/CC (or equivalent), or designated representative.

A8.3.2.5. **(USAFESUP)** At OG/CC (or equivalent) discretion, currently active-duty but previously-certified FCF aircrew may be designated as FCF sim supervisors for the purposes of updating/regaining currency. Document designations via official memo and archive with FCF Program Manager's program information.

A8.3.3. **(USAFESUP)** If an FCF is needed during a TDY and an FCF crew is not available, the SQ/CC or designated representative, may issue temporary certification, designating the most highly qualified aircrew available to perform FCF duties. The certification will terminate upon completion of the TDY.

A8.4. (USAFESUP) Flight Requirements.

A8.4.1. **(USAFESUP)** Do not shut down engines while airborne unless the requirement is explicitly identified in the -6 and -1 TOs.

A8.4.2. (USAFESUP) Fly FCFs under IFR to the maximum extent practical. If required to perform an FCF under VFR, then radar flight following (or HN equivalent) will be used to maximum extent practical.

A8.4.2.1. (Added) (LAKENHEATH) (C) (E) Fly under “TRAFFIC” service to the maximum extent possible. While not equivalent to Instrument Flight Rules (IFR) in the United Kingdom (UK), “TRAFFIC” is required to general handle.

A8.4.2.2. (Added) (LAKENHEATH) (HH-60) FCFs will be flown in Visual Meteorological Conditions (VMC) conditions. Use Basic Service to the maximum extent possible.

A8.4.3. (USAFESUP) A supervisor of flying (SOF) will be in the control tower for all fighter aircraft FCFs conducted at home station or deployed locations (a SOF is not required for FCFs conducted at European depot locations).

A8.5. (Added-LAKENHEATH) F15 FCF OCF and High Speed Taxi Flight Profile Management and Requirements.

A8.5.1. (Added-LAKENHEATH) Flight Planning and Execution.

A8.5.1.1. (Added-LAKENHEATH) Minimum weather requirements for a FCF will be a 1,500-foot ceiling and 5,000 meters visibility.

A8.5.1.1.1. (Added-LAKENHEATH) The 48 OG/CC may waive weather minimums to a 700-foot ceiling and 2,400 meters visibility if operational requirements dictate.

A8.5.1.1.2. (Added-LAKENHEATH) No special weather requirements for upgrade, training, or recurrency FCF flights are required beyond what is required by AFI 11-202 Volume 3 USAFE Supplement, *General Flight Rules*.

A8.5.1.2. (Added-LAKENHEATH) OCFs will be flown during daylight hours with weather minimums of 500-foot ceiling and 2,400 meters visibility.

A8.5.1.3. (Added-LAKENHEATH) Minimum weather requirements for a maximum performance climb will be a 2,000-foot ceiling and 5,000 meters visibility with the ability to recover in VMC.

A8.5.1.4. (Added-LAKENHEATH) A VMC takeoff time will be computed to ensure landing accomplished prior to official sunset not).

A8.5.1.5. (Added-LAKENHEATH) Do not fly FCF sorties in conjunction with other training missions unless in compliance with TO 1-1-300 paragraph 4.8.

A8.5.1.6. (Added-LAKENHEATH) Fly all FCF profiles IAW the most current Letter of Agreement (LOA) Between RAF (U) Swanwick (Swanwick(Mil)) and RAF Lakenheath (LKH) Radar Approach Control (RAPCON) concerning F-15 FCFs. The LOA is managed by the 48th Operations Support Squadron Airfield Operations Flight (48 OSS/OSA) and released by FCF read file.

A8.5.1.7. (Added-LAKENHEATH) Strive to perform engine restarts within 20 nautical miles of RAF Lakenheath to allow expeditious return to base in case of engine malfunction or failure. Coordinate the supersonic run with London Military at least 5

minutes prior. Perform the supersonic run IAW UK airspace regulations. Perform post-supersonic checklist items en route to and in the Wash or Lakenheath Aerial Training Area.

A8.5.1.8. **(Added-LAKENHEATH)** FCF sorties will be flown when at least one other non-FCF 48 FW aircraft is airborne to serve as a chase aircraft if required.

A8.5.1.9. **(Added-LAKENHEATH)** Obtain 48 OG/CC verbal approval for all FCFs prior to crew step. FCF aircrew will complete the FCF Briefing/Tracking Log which is a portion of the FCF Checklist (maintained on the 48 OG Stan/Eval Division SharePoint® page with appropriate Yes, No, or Not Applicable answers before going to the aircraft. The squadron Operations Supervisor will then ensure the appropriate details (line number, aircraft tail number, crew names, estimated departure time, estimated arrival, and remarks, i.e., reason for FCF) are entered into the daily schedule and PEX. Only 48 OG/CC notification is required for upgrade, training, or recurrency FCF flights.

A8.5.1.10. **(Added-LAKENHEATH)** Prior to departing for the aircraft for FCF's and high speed taxi checks, the FCF pilot will advise the Supervisor of Flying (SOF) of aircraft tail number, estimated takeoff time, aircrew names, no later than (NLT) takeoff time, and reason for FCF to include any unusual maintenance history of the aircraft.

A8.5.1.10.1. **(Added-LAKENHEATH)** For high speed taxi checks, all flight gear will be worn due to the possibility of takeoff. 48th Maintenance Group (MXG) Quality Assurance (MXG/MXQA) will step to the aircraft with the aircrew.

A8.5.1.11. **(Added-LAKENHEATH)** For FCF training profile sorties, use the following call signs: 492d Fighter Squadron (492 FS): DEMO 92; 493d Fighter Squadron (493 FS): DEMO 93; 494th Fighter Squadron (494 FS): DEMO 94.

A8.5.1.12. **(Added-LAKENHEATH)** For actual FCF profile sorties, use the following call signs: 492 FS: DEMO 02, 493 FS: DEMO 03, 494 FS: DEMO 04.

A8.5.2. **(Added-LAKENHEATH)** Maintenance Requirements and Actions.

A8.5.2.1. **(Added-LAKENHEATH)** The FCF profile is normally determined by the maintenance requirement causing the FCF and is outlined in TO 1-1-300 and the Dash-6 TOs. The full profile FCF is normally flown each time an FCF is required. However, at the discretion of the 48th Maintenance Group Commander (48 MXG/CC) and 48 OG/CC (or deployed equivalents) recommendation, the FCF flight profile may be tailored for the maintenance requirement causing the FCF. Generally, routing for approval will include the appropriate Aircraft Maintenance Unit (AMU) officer in charge (OIC)/noncommissioned officer in charge (NCOIC) and 48 OG FCF PM, but can be adjusted as required.

A8.5.2.2. **(Added-LAKENHEATH)** The owning AMU will notify the FCF PM and FCF NCOIC prior to any aircraft flying an FCF or OCF.

A8.5.2.3. **(Added-LAKENHEATH)** The owning AMU will ensure Job Standards (JST) is written or AFTO Form 781A, *Maintenance Discrepancy and Work Document* (prescribed by TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*), FCF/OCF preprint is installed in the active aircraft forms. (FCF and OCF share the same JST).

A8.5.2.4. **(Added-LAKENHEATH)** A qualified Quality Assurance (QA) inspector will review aircraft weight and balance documents (DD Form 365-4, *Weight and Balance Clearance Form F – Transport/Tactical*, prescribed by TO 1-1B-50, *Aircraft Weight and Balance*) and ensure a preflight Quality Assurance Quality Verification Inspection (QAQVI) is accomplished within 24 hours of flight attempt. Additionally, the FCF NCOIC will review Integrated Maintenance Data System (IMDS) screen 380 and ensure no open Red X or overdue inspections exist. FCF ground aborts and additional FCF attempts will not require re-accomplishment of preflight Quality Verification Inspection (QVI).

A8.5.2.5. **(Added) (LAKENHEATH) (FCF only)** The appropriate aircraft AFTO Form 781 series, including all completed entries pertaining to the FCF, will be reviewed by corresponding AMU personnel prior to the FCF. After 781 documentation actions are completed and after signing an Exceptional Release (ER), 48 MXG/MXQA personnel will review all AFTO Form 781 series to determine if maintenance has been performed which may affect the FCF. The owning AMU will provide 48 MXG/MXQA the AFTO Form 781 series for review NLT 4 hours prior to aircrew show. QA Chief Inspectors may reduce 4-hour requirements in special circumstances. For subsequent attempts, the AFTO Form 781 series must be provided NLT 2 hours prior to the aircrew show.

A8.5.2.6. **(Added) (LAKENHEATH) (OCF only)** While processing the aircraft forms, MXG/MXQA will use the same procedures for reviewing FCF forms, with the exception that the QA FCF preflight QVI, QA FCF weight and balance records review and post FCF forms review are not required for OCF flights and must be documented as such.

A8.5.2.7. **(Added) (LAKENHEATH)** (High Speed Taxi Check only) Aircrew will review the forms with a MXG/MXQA representative prior to stepping to the aircraft.

A8.5.2.8. **(Added-LAKENHEATH)** Aircraft impounded for flight controls may require, if determined by the MXG/CC and OG/CC, as a minimum, a modified FCF profile to include all applicable TO 1-MDS-6CL ground and airborne flight control checks. If the first flight results in a non-release due to an airborne flight control check failure or other system failure, the subsequent profile(s) will include, as a minimum, all TO 1-MDS-6CL flight control checklist items which failed and those checks not previously accomplished.

A8.5.3. **(Added-LAKENHEATH)** FCF Configuration and Fuel Requirements. The preferred configuration for FCF fighter aircraft is symmetrical without any Low Altitude Navigation Tactical Infrared for Night (LANTIRN) pods (F-15E only), captive missiles, or pylons on stations two, five, and eight. The OG/CC or FCF PM may determine an actual FCF flight without the preferred configuration.

A8.5.4. **(Added-LAKENHEATH) FCF Preflight and Ground Operations.**

A8.5.4.1. **(Added-LAKENHEATH)** FCF aircrew will perform a thorough review of all aircraft AFTO 781-series forms prior to flight, and receive a detailed briefing from 48 MXG/MXQA or the FCF PM on the reason for the FCF and profile requirements.

A8.5.4.2. **(Added-LAKENHEATH)** Perform the TO 1-MDS-6CL taxi procedures in non-congested areas. Brief ground crew on: safety, location of hydraulic circuit breakers and exhaust ports, checklist flow, and when they need to assist the aircrew.

A8.5.4.3. **(Added-LAKENHEATH)** Intercom will be available between air and ground crews during launch.

A8.5.5. (Added-LAKENHEATH) FCF/OCF Release.

A8.5.5.1. **(Added-LAKENHEATH)** A FCF release occurs upon the successful completion of all requirements as determined by the FCF aircrew. The final decision to release rests solely with the aircraft commander. A FCF conditional release may occur when the aircraft does not successfully complete FCF requirements due to a specific system malfunction if the FCF aircrew determines the malfunction may be corrected without generating another FCF.

A8.5.5.2. **(Added-LAKENHEATH)** Aircraft requiring full FCF profiles must complete the entire profile to be released.

A8.5.5.3. **(Added-LAKENHEATH)** If weather or aircraft malfunction prevents accomplishing any checklist steps, the aircraft should not be released.

A8.5.5.4. **(Added-LAKENHEATH)** If the FCF fails for engine in-flight restart or FCF flight control checks, the aircraft is not released, and requires an additional FCF for both the failure, and unaccomplished checklist items.

A8.5.5.5. **(Added-LAKENHEATH)** If the FCF fails solely for the rudder limiter check, 48th Equipment Maintenance Squadron Repair and Reclamation (48 EMS/MXMMT) will perform the rudder travel limiter operational check (reference E-Tool 27-20-06, *Flight Control Systems*). Upon successful completion of the check, the FCF may be released.

A8.5.5.6. **(Added-LAKENHEATH)** An air abort due to a condition other than the one that generated the FCF is not counted as a FCF non-release, provided the original condition requiring the FCF checked positively. All ground aborts result in a non-release. If a malfunction occurs during a FCF and is not related to the condition generating the FCF and the original condition is cleared, the aircraft is released for flight.

A8.5.5.7. **(Added-LAKENHEATH)** All FCF aircrew will be debriefed by 48 MXG/MXQA or deployed QA to determine if all requirements were accomplished.

A8.5.5.8. **(Added-LAKENHEATH)** Upon completion of the FCF/OCF flight, MXG/MXQA will document the FCF/OCF in the FCF/OCF tracking book.

A8.5.5.9. **(Added-LAKENHEATH)** After completion of the FCF, send the FCF checklist to 48th Maintenance Group Maintenance Operations (48 MXG/MXO) Plans, Scheduling, and Documentation (PS&D) for inclusion in the aircraft jacket file.

A8.5.6. (Added-LAKENHEATH) Off-station FCF Procedures.

A8.5.6.1. **(Added-LAKENHEATH)** Contact 48 MXG/MXQA representative at the off-station location. If one is not available, contact 48 MXG/MXQA.

A8.5.6.2. **(Added-LAKENHEATH)** Contact the 48 MXG/MXQA office and 48 EMS Transient Alert office (48 EMS/MXMMTA) at the off-station location. Coordinate with them for their local FCF guidance.

A8.5.6.3. **(Added-LAKENHEATH)** Ensure AFTO Forms 781 are correct and reviewed by a MXG/MXQA representative.

A8.5.6.4. **(Added-LAKENHEATH)** Coordinate for airspace considerations to include supersonic airspace and special use airspace for maneuvering.

A8.5.7. **(Added-LAKENHEATH) OCF Flight Profile Management.** An OCF will normally be flown single ship if on a profile tailored with inputs from the AMU OIC with final approval by the fighter SQ/DO or SQ/CC. OCFs may be flown in conjunction with another operational mission at the SQ/CC or SQ/DO discretion.

A8.5.8. **(Added-LAKENHEATH) F-15 High Speed Taxi Checks Profile Management.**

A8.5.8.1. **(Added-LAKENHEATH)** Aircrew performing high speed taxi checks will compute takeoff and landing data to indicate the highest speed expected to ensure sufficient stopping distance is available for existing runway conditions without exceeding normal brake energy limits.

A8.5.8.2. **(Added-LAKENHEATH)** For taxi checks, lower the hook if there is any doubt about stopping the aircraft within the bounds of the remaining runway.

A8.6. (Added)(LAKENHEATH) HH60 FCF and OCF Procedures.

A8.6.1. **(Added-LAKENHEATH) Flight Planning and Execution.**

A8.6.1.1. **(Added-LAKENHEATH)** For actual FCF profile sorties, use the following call signs: 56 RQS: JOLLY 41-49 (AFI 11-2HH-60 Volume 3 Lakenheath Supplement, *HH-60--Operations Procedures*).

A8.6.1.2. **(Added-LAKENHEATH)** Do not fly FCF sorties in conjunction with other training missions unless in compliance with TO 1-1-300 paragraph 4.8.

A8.6.1.3. **(Added-LAKENHEATH)** Squadron Scheduling (56 RQS/DOS) will inform Wing Scheduling (48 OSS/OSOS) when planning a FCF during hours of no other scheduled local flying. OSOS will inform 48 OSS Airfield Management (48 OSS/OSAA), who will notify base agencies.

A8.6.1.4. **(Added-LAKENHEATH)** Prior to departing for the aircraft, the FCF pilot will advise the Operations Supervisor/Duty Desk Officer of: aircraft tail number, estimated takeoff time, aircrew names, NLT takeoff time, and reason for FCF to include any unusual maintenance history of the aircraft.

A8.6.2. **(Added-LAKENHEATH) Maintenance Requirements and Actions.**

A8.6.2.1. **(Added-LAKENHEATH)** Upon completion of 600-hour phase inspection, QA will perform a preflight QVI within 24 hours of FCF start. FCFs not in conjunction with a 600-hour phase inspection will only require a QVI of the component changed.

A8.6.2.2. **(Added-LAKENHEATH)** In the event an FCF is being accomplished requiring ground checks prior to flight, the 781 forms will be reviewed prior to the ER.

A8.6.2.3. **(Added-LAKENHEATH)** FCF requirements vary significantly and will be as determined by 48 MXG/MXQA and the 56 RQS/CC based on type of maintenance accomplished.

A8.6.2.4. **(Added-LAKENHEATH)** Configuration will be determined by 48 MXG/MXQA and the FCF Aircraft Commander based on required FCF checks.

A8.6.2.5. **(Added-LAKENHEATH)** After completion of hourly phase inspections, a tailored FCF profile will be accomplished.

A8.6.2.6. **(Added-LAKENHEATH)** The owning Helicopter Maintenance Unit (HMU) will ensure JST is written or AFTO Form 781A FCF preprint is installed in the active aircraft forms. (FCF and OCF share the same JST).

A8.6.2.7. **(Added-LAKENHEATH)** A qualified QA inspector will review aircraft weight and balance documents (DD Form 365-4) and ensure a preflight QAQVI is accomplished within 24 hours of flight attempt (FCF start HH-60 only). Additionally, the FCF NCOIC will review IMDS screen 380 and ensure no open Red X or overdue inspections exist. FCF ground aborts and additional FCF attempts will not require re-accomplishment of preflight QVI.

A8.6.2.8. **(Added-LAKENHEATH)** The appropriate aircraft AFTO Form 781 series, including all completed entries pertaining to the FCF, will be reviewed by corresponding HMU personnel prior to the FCF. After 781 documentation actions are completed and after signing an ER, 48 MXG/MXQA personnel will review all AFTO Form 781 series to determine if maintenance has been performed which may affect the FCF. The owning HMU will provide 48 MXG/MXQA the AFTO Form 781 series for review NLT 4 hours prior to aircrew show. QA Chief Inspectors may reduce 4-hour requirements in special circumstances. For subsequent attempts, the AFTO Form 781 series must be provided NLT 2 hours prior to the aircrew show.

A8.6.2.9. **(Added-LAKENHEATH)** In the event an FCF is being accomplished requiring ground checks prior to flight, the forms will be reviewed prior to the ER.

A8.6.3. (Added-LAKENHEATH) Profile Management and Requirements.

A8.6.3.1. **(Added-LAKENHEATH)** FCF aircrew will perform a thorough review of all aircraft AFTO 781-series forms prior to flight, and receive a detailed briefing from 48 MXG/MXQA on the reason for the FCF and profile requirements.

Attachment 9 (Added-USAFESUP)**OPERATIONS NEAR VOLCANIC ACTIVITY**

A9.1. (USAFESUP) The guidance in this attachment is derived from experiences during recent volcanic eruptions within the USAFE-AFAFRICA AOR (e.g., Iceland, Sicily) as well as reference to UK Civil Aviation Administration (CAA), EUROCONTROL, and ICAO documentation. Reference the following documents/links for more information.

A9.1.1. (USAFESUP) London Volcanic Ash Advisory Center (VAAC): <http://www.metoffice.gov.uk/aviation/vaac/>.

A9.1.2. (USAFESUP) Toulouse VAAC: <http://www.meteo.fr/vaac/eindex.html>

A9.1.3. (USAFESUP) UK CAA: Impacts of Volcanic Ash on Aviation Safety: <http://www.caa.co.uk/default.aspx?catid=2011&pagetype=90>

A9.1.4. (USAFESUP) EUROCONTROL document library: http://www.skybrary.aero/index.php/Volcanic_Ash

A9.2. (USAFESUP) Definitions. Ash concentration levels of “low”, “medium”, and “high” are IAW the definitions in the ICAO Europe and North Atlantic Regions Volcanic Ash Contingency Plan (EUR Doc 019-NAT Doc 006 Part II (December 2010)) found at the following link:

<http://www.icao.int/EURNAT/EUR%20and%20NAT%20Documents/Forms/AllItems.aspx>

A9.2.1. (USAFESUP) **Volcanic Activity** . Both the volcano itself (i.e., the volcanic eruption) and any noticeable indications of volcanic ash (e.g., visible ash, acrid odors, etc.) as well as any actual or forecast areas of “medium” or “high” ash contamination.

A9.2.2. (USAFESUP) **Volcanic Activity Buffer Zone (VABZ)** . The zone outside of “Volcanic Activity” where ash is forecasted, but may not be seen with the naked eye. Additionally, the effects of volcanic ash will likely not be immediately noticeable (if at all). This zone implies an increased level of Risk Management, vigilance to aircraft performance during flight, and post flight reporting requirements.

A9.2.2.1. (USAFESUP) The VABZ includes any actual or forecast areas of “low” ash contamination.

A9.2.2.2. (USAFESUP) The VAAC may also produce a Volcanic Ash Advisory Graphic with lines depicting ash concentrations at various altitudes (see **Figures A9.1.** and **A9.2** . The lines depicted on this chart are rough equivalents of the VABZ boundary. **NOTE:** Areas of “medium”/“high” ash concentration are not depicted, and the VAAC does NOT depict the boundary of “Volcanic Activity”.

A9.2.3. (USAFESUP) **Terminal Area.** The area within the boundaries, both laterally and vertically, of Class B, C, or D airspace depending on the class of field where operations are being conducted.

Figure A9.1. (USAFESUP) Sample London VAAC Ash Advisory Graphic.

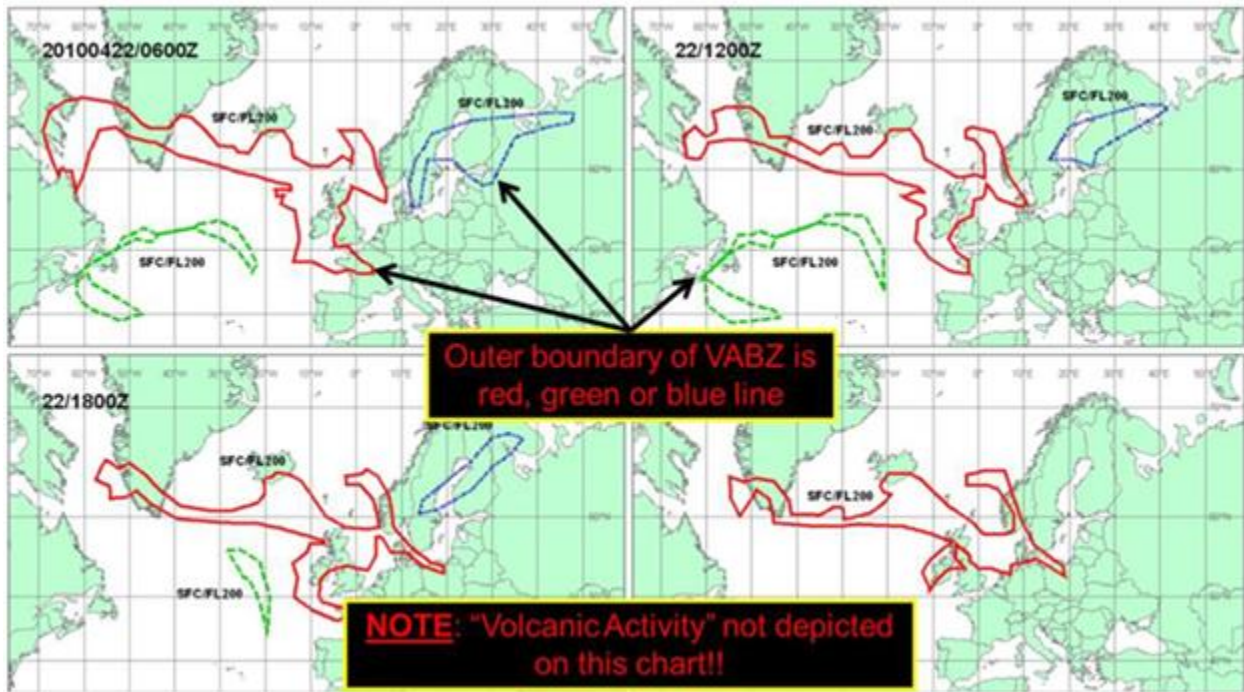
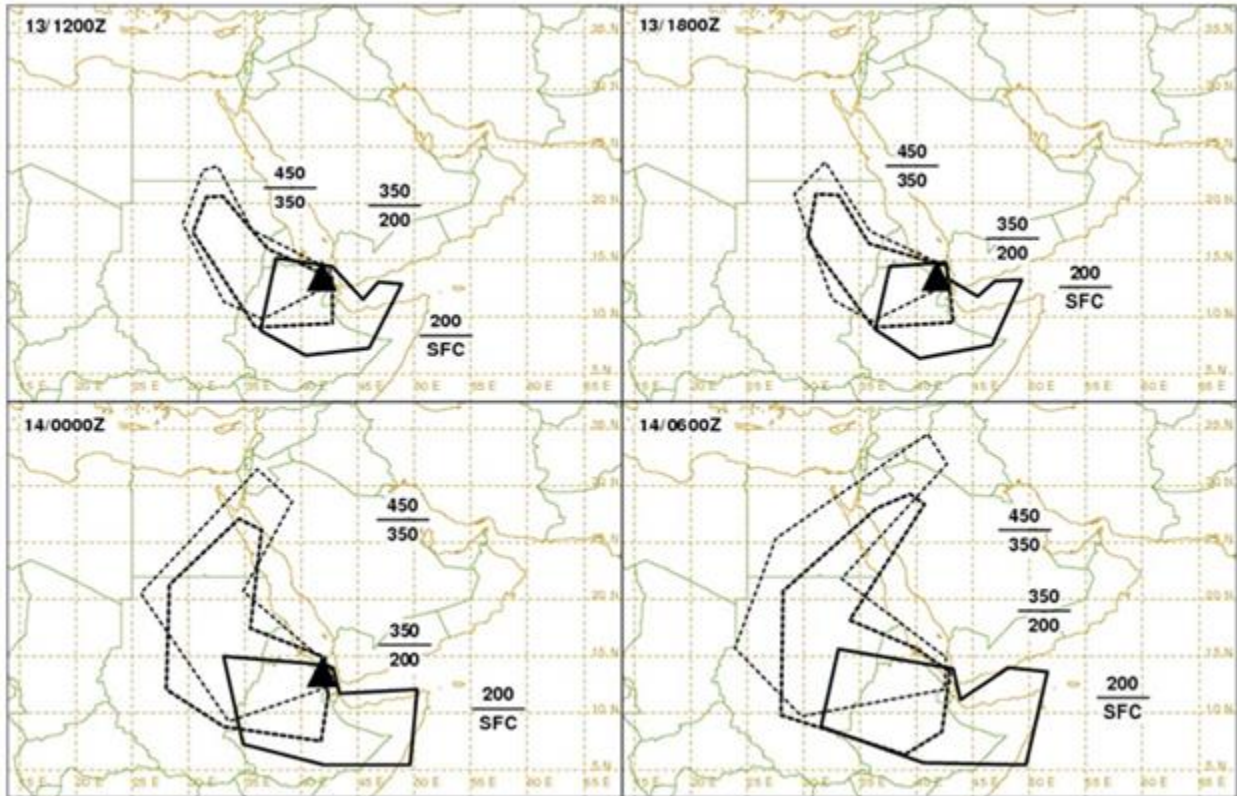


Figure A9.2. (USAFESUP) Sample Toulouse VAAC Ash Advisory Graphic.



A9.3. (USAFESUP) Operational Guidance.

A9.3.1. (USAFESUP) Volcanic Activity.

A9.3.1.1. (USAFESUP) IAW paragraph **6.4.2.**, unless conducting rescue operations, USAFE-AFAFRICA aircrews will not operate within 50 NMs of known or reported hazardous volcanic ash.

A9.3.1.1.1. (USAFESUP) **Exception:** USAFE-AFAFRICA/A3 approves day and night RPA launch and recovery operations from USAFE-AFAFRICA operating locations with a 10 NM minimum standoff from volcanic ash during “Volcanic Activity.”

A9.3.1.2. (USAFESUP) USAFE-AFAFRICA aircrews will accomplish post-flight reporting of any operations in/through/over/under of “Volcanic Activity” IAW paragraph **A9.6.** .

A9.3.2. (USAFESUP) **VABZ.** USAFE-AFAFRICA/A3 delegates approved flight operations approval within the VABZ to the OG/CC (or equivalent). Aircrew/units will accomplish post-flight reporting of flights in or through the VABZ IAW paragraph **A9.6.** . Flights over/under the VABZ do not require reporting.

A9.3.3. (USAFESUP) **Visible Ash (N/A for RPA recoveries).** In all cases, aircrew will not fly through visible ash regardless of the forecast ash contamination level.

A9.3.3.1. (USAFESUP) If aircrew witness unforecasted visible ash they will avoid it by a minimum of 5,000 feet vertically or 60 NM laterally and make every effort to issue a PIREP for follow-on flights. If aircrew are within these limits at the time of ash encounter, they will take the most expeditious routing to achieve these limits or greater recognizing that higher power settings associated with climbs may exacerbate ash damage to the engines).

A9.3.3.2. (USAFESUP) If overflying unforecasted visible ash, aircrew will brief contingency plans for emergencies that may require immediate descents.

A9.3.4. (USAFESUP) **In/Near the VABZ.** Post flight reporting may be required (see paragraphs **A9.3.2.** and **A9.6.**).

A9.3.5. (USAFESUP) Operations During HN Airspace Closure.

A9.3.5.1. (USAFESUP) If HN civil/military airspace is closed due to observed or suspected volcanic ash (regardless of VAAC product depictions), USAFE-AFAFRICA flight operations will also be suspended in that airspace.

A9.3.5.2. (USAFESUP) If civil/military airspace opens but HN is not providing IFR services, USAFE-AFAFRICA aircraft are permitted to conduct VFR operations IAW this publication.

A9.3.5.3. (USAFESUP) Waivers may be granted to operate in/through airspace closed by the HN, but will be limited only to Urgent Aeromedical Evacuation and Search and Rescue or Search and Rescue support missions (see paragraph **1.2.5.**).

A9.4. (USAFESUP) Risk Management. Before allowing flights in/through their airspace, certain European ATC agencies may require proof of a Risk Management assessment regarding

flight operations in forecasted volcanic ash (as depicted by VAAC products). Units will therefore, at a minimum, accomplish the following items.

A9.4.1. (USAFESUP) Add an item in unit-standard pre-flight Risk Management assessments when flying IAW paragraph **A9.3.** . Units will assign a severity index consistent with unit Risk Management standards IAW with the following hierarchy (from most severe to least severe):

A9.4.1.1. (USAFESUP) In “Volcanic Activity”

A9.4.1.2. (USAFESUP) Within 60 NM of “Volcanic Activity”

A9.4.1.3. (USAFESUP) Inside the VABZ, but outside 60 NM from “Volcanic Activity”

A9.4.2. (USAFESUP) Insert the following statement in the comments section of the DD Form 1801: “Risk assessment for flight operations in forecast volcanic ash is on file with aircraft’s assigned unit.”

A9.5. (USAFESUP) Preflight Weather Assistance. Weather flights will provide appropriate ash forecast information with preflight weather briefings.

A9.5.1. (USAFESUP) Additional products based on the data from the responsible VAAC (e.g., London VAAC for any Iceland volcano) may be used for added situational awareness to include Air Force Weather Agency products (AFWA) that are based on VAAC analysis.

A9.5.2. (USAFESUP) If “VA” (Volcanic Ash) is included in the METAR/TAF, the intent is to ensure aircrew reference the appropriate volcanic ash charts to determine operational constraints consistent with the guidance in this attachment. “VA” in and of itself does not communicate an operational restriction.

A9.6. (USAFESUP) Reporting.

A9.6.1. (USAFESUP) Whenever flight through “Volcanic Activity” occurs (either by flying through the area described in paragraph **A9.2.1.** or by encountering conditions as published in TO and/or AFI 11-2MDSV3 guidance) aircrew will report flight details per paragraph **A9.6.4.** as a Code 3 in the aircraft forms.

A9.6.2. (USAFESUP) Whenever flight through the VABZ occurs aircrew will record flight details per paragraph **A9.6.4.** as an “Info Note” on the aircraft AFTO Form 781A, *Maintenance Discrepancy and Work Document*. The effects of long term low-concentration ash exposure will be analyzed based on the reported data; therefore, aircrew must ensure reporting is as accurate as possible.

A9.6.3. (USAFESUP) In all cases, report flight details in an Ops-maintained activity log (see paragraph **A9.6.6.**). Units will ensure the recorded information is made available to wing safety offices and archived for at least one year from the date of the flight.

A9.6.4. (USAFESUP) Flight Details to Record:

A9.6.4.1. (USAFESUP) Approximate Location (Lat/Long if known, or general geolocation if Lat/Long not available).

A9.6.4.2. (USAFESUP) Time (zulu) and duration (to the nearest tenth, e.g., 1.4) in “Volcanic Activity” and/or the VABZ.

A9.6.4.3. (USAFESUP) Altitude, speed, type maneuvering (e.g., cruise, tactical, etc.)

A9.6.5. (Added-USAFESUP) NLT 1500Z on the first Friday of the month (Thursday if Friday is a holiday), Wings will provide a roll-up (see paragraph A9.6.6.) of the previous month's "Volcanic Activity" and VABZ flight details to the USAFE/A3TV (Workflow) Organizational E-mail (usafea3tv.a3tv@us.af.mil) with totals for the following (if no flights were logged, no report is needed):

A9.6.5.1. (USAFESUP) Flights in "Volcanic Activity"

A9.6.5.2. (USAFESUP) Average duration of exposure to "Volcanic Activity"

A9.6.5.3. (USAFESUP) Flights in the VABZ

A9.6.5.4. (USAFESUP) Average duration of exposure to the VABZ

A9.6.6. (USAFESUP) For unit recording and reporting of "Volcanic Activity" and VABZ flight operations use the "USAFE-AFAFRICA Volcano Flight Activity Log" located on the USAFE-AFAFRICA/A3TV (ICE) page (https://ice.usafe.af.mil/sites/A3/A3T/A3TV_External/default.aspx).

A9.7. (USAFESUP) Requesting Waivers. Submit waiver requests IAW paragraph 1.2.5.

Attachment 10 (Added-USAFESUP)

USAFE-AFAFRICA MODE S OPERATIONS AND ADDRESS MANAGEMENT

A10.1. (USAFESUP) Purpose . This attachment outlines Mode S capabilities, address (both default and dynamic) distribution and management, and usage by USAFE-AFAFRICA and USAFE-AFAFRICA gained aircraft. For more information on country-specific employment guidance and restrictions reference the HQ USAFE-AFAFRICA/A3TV SharePoint https://ice.usafe.af.mil/sites/A3/A3T/A3TV_External/default.aspx.

A10.2. (USAFESUP) Basic Mode S Capabilities. A *default address* is assigned to each Mode S transponder when it is installed in an aircraft. No two aircraft should ever have the same default address.

A10.2.1. (USAFESUP) Mode S transponders in most military aircraft are equipped with the ability to accept a different address than the default to increase Operational Security (OPSEC). This address is called a *dynamic address*. No two aircraft should ever have the same dynamic address.

A10.2.2. (USAFESUP) The dynamic address does not overwrite the default since the default, in most cases, is either hardwired into the Mode S transponder or exists in non-volatile memory. The dynamic address will simply override the default address until electrical power is removed from the aircraft.

A10.2.3. (USAFESUP) For most aircraft, once electrical power is reapplied, the default address will automatically be set into the transponder. Reference aircraft specific TOs for details on individual system's capabilities.

A10.2.4. (USAFESUP) Neither default or dynamic Mode S addresses themselves nor an association of a Mode S address with a particular aircraft is classified. However, to aid in OPSEC, default and dynamic addresses assigned to each USAFE-AFAFRICA flying wing should be kept For Official Use Only (FOUO) as well as any documentation that lists them.

A10.3. (USAFESUP) Address Distribution and Management

A10.3.1. (USAFESUP) Default Address Assignment .

A10.3.1.1. (USAFESUP) The default address is assigned to a tail number by the SPO for that MDS and will stay with that aircraft as long as it is still under US registry. Should a Mode S transponder be removed from an aircraft, the default address would stay with the aircraft even if a new transponder is installed.

A10.3.2. (USAFESUP) Default Address Management.

A10.3.2.1. (USAFESUP) **Aircraft Forms .** The default address will be annotated in block 9 of the aircraft AFTO Form 781F, *Aerospace Vehicle Identification Document*, as follows: "Aircraft Mode Select (S) Default Address: XXXXXXXX"

A10.3.2.2. (USAFESUP) **MAF Only .** The default address will be posted in the cockpit so as to be readily viewable by aircrew during flight (e.g., placard next to aircraft tail number). This requirement may be met electronically if the default address can be viewed through the Flight Management System (FMS).

A10.3.3. (USAFESUP) **Dynamic Address Assignment (Training and Exercise Sorties)** . HQ USAFE-AFAFRICA/A3TV will be the OPR for dynamic address assignment to ensure deconfliction of dynamic addresses. Units will reference the dynamic address database on the HQ USAFE-AFAFRICA/A3TV ICE page https://ice.usafe.af.mil/sites/A3/A3T/A3TV_External/default.aspx.

A10.3.3.1. (USAFESUP) Dynamic address usage is optional for all units OPCON to USAFE-AFAFRICA. OG and SQ commanders may institute usage of dynamic addresses at any time, while ensuring that no two aircraft fly with the same Mode S address.

A10.3.3.1.1. (USAFESUP) HQ USAFE-AFAFRICA/A3TV distributes a number of addresses equal to twice the number of PAA at each participating wing. Units desiring more addresses will submit requests via the USAFE/A3TV (Workflow) Organizational E-mail usafea3tv.a3tv@us.af.mil.

A10.3.4. (USAFESUP) **Dynamic Address Management Procedures.** USAFE-AFAFRICA units employing dynamic addresses at the unit level will use the following management procedures:

A10.3.4.1. (USAFESUP) Each unit is responsible for distributing their HQ USAFE-AFAFRICA assigned block of dynamic addresses to their respective squadrons. Once the unit distributes the dynamic addresses, squadrons will not share addresses except when same MDS squadrons are conducting combined operations, then only the host squadron's dynamic addresses will be used.

A10.3.4.1.1. (USAFESUP) The squadron flying supervision is responsible for tracking the dynamic addresses that have been assigned to each line number.

A10.3.4.1.2. (USAFESUP) If an aircraft must divert and land at other than the planned destination (i.e., home station for local training sorties), aircrew will cease using dynamic addressing once at the divert airfield and use ONLY the default address for any other flights needed to return the aircraft to home station.

A10.3.4.2. (USAFESUP) Units will "shift" dynamic addresses at least once every quarter on the first flying day of the month starting with Jan (i.e., 1 Jan, 1 Apr, 1 Jul, 1 Oct) by moving the last dynamic address to the top of the list and all subsequent addresses down one line.

A10.3.4.3. (USAFESUP) For continuous off-station training sorties (i.e., non-contingency deployments/cross-countries), flying supervision for the deployment/cross-country will take twice as many dynamic addresses as the number of jets flown. Except for ensuring that both home station and deployed dynamic addresses are fully deconflicted and tracked, off-station dynamic address management is the same as home-station.

A10.3.4.4. (USAFESUP) If there is any confusion over the correct dynamic address to use or whether or not aircrew are authorized to use a dynamic address, aircrew will consult with squadron flying supervision or resort to using the default address.

A10.3.4.5. (USAFESUP) Aircrew will refrain from transmitting dynamic addresses over a non-secure radio and at no time will associate a dynamic address with a tail number or aircraft call-sign.

A10.4. (USAFESUP) Mode S Usage.

A10.4.1. **(USAFESUP) Flight ID Entry** . Use the following rules when entering Flight IDs into the Mode S transponder.

A10.4.1.1. **(USAFESUP)** The first digit is always the first letter of the call sign.

A10.4.1.2. **(USAFESUP)** No spaces, dashes or special characters should be in between digits.

A10.4.1.3. **(USAFESUP)** If the call sign is not a complete 7-digits, then leave spaces at the end (i.e., SPAR11_, not SPAR_11).

A10.4.2. **(USAFESUP) Default/Dynamic Address Entry** . Use the following guidance when inputting the Mode S address into the Mode S transponder.

A10.4.2.1. **(USAFESUP)** Enter either the default or dynamic address into the Mode S transponder IAW AFI 11-2MDSV3, local, and TO guidance.

A10.4.2.2. **(USAFESUP)** Regardless of the aircraft, in order to maximize OPSEC, ensure the Mode S transponder is OFF prior to address entry. This will minimize any attempt to correlate the address with a specific aircraft.

A10.4.2.3. **(USAFESUP)** Loss of power via generator failure, power interruption, or upon turning the equipment off may cause the loss of the dynamic address and automatic reversion to and subsequent transmission of the default address. It is imperative aircrew check their Mode S transponders after a loss of power to be aware of which address and Flight/Aircraft ID is being transmitted.

A10.4.3. **(USAFESUP) Peacetime/Non-Contingency** .

A10.4.3.1. **(USAFESUP)** Default or dynamic addresses assigned to USAFE-AFAFRICA units will be used anytime the aircraft is flying under USAFE-AFAFRICA OPCON anywhere in the world.

A10.4.3.2. **(USAFESUP)** Mode S will be ON/selected for all missions utilizing either the default or dynamic address. At a minimum, Mode S will be on from takeoff through landing. **Exception:** Mode S may be turned off while conducting tactical employment training unless required IAW HN AIP or other regulatory guidance.

A10.4.3.2.1. **(USAFESUP) MAF** . Reference AFI 11-2MDSV3, local, and TO guidance for Mode S usage guidance during flight. At a minimum, be prepared to have Mode S ON/selected whenever actively squawking Mode 3/A/C or when the aircrew would normally squawk Mode 3/A/C even if no Mode 3/A/C code is issued.

A10.4.3.2.2. **(USAFESUP) CAF.** Members within a formation will squawk Mode S anytime when actively squawking Mode 3/A/C or when the aircrew would normally squawk Mode 3/A/C even if no Mode 3/A/C code is issued.

A10.4.3.2.3. **(USAFESUP) NOTE:** Some ATC radar systems within Europe may transition to Mode S-only interrogators. Therefore a traditional Mode 3/A/C code may or may not be issued, but aircrew are still expected to have Mode S ON/selected. If in doubt, keep Mode S ON/selected unless/until the ATC controllers asks for it to be “strangled”.

A10.4.3.3. **(USAFESUP)** Do not use Mode S during Coronet movements (i.e., deployments and redeployments) or anytime while in formation with a tanker.

A10.4.4. (USAFESUP) Contingency Operations.

A10.4.4.1. **(USAFESUP)** Until incorporated into SPINS/Rules of Engagement (ROE), ensure Mode S is turned OFF/deselected by any means available while in contingency airspace. Avoid squawking Mode S to the maximum extent possible to avoid broadcasting position/tactics to potential adversaries.

A10.4.4.2. **(USAFESUP)** Once Mode S is incorporated into SPINS/ROE, address management and usage will be through the Air Tasking Order (ATO) in conjunction with other Identify Friend-or-Foe (IFF) codes.

A10.4.5. **(USAFESUP) Change of Operational Control (CHOP).** USAFE-AFAFRICA aircraft CHOP'd to another MAJCOM may use existing default addresses or dynamic addresses issued by that MAJCOM as long as the gaining MAJCOM has procedures in-place to ensure dynamic address deconfliction. SPINS/ROE incorporating Mode S procedures take precedence over this guidance. In the event of confusion regarding address assignment; USAFE-AFAFRICA aircraft will revert to using their default address, if practical, until the situation is resolved.